DOCUMENT RESUME

ED 328 719 CE 056 885

AUTHOR Moore, Charles G.; And Others
TITLE Industrial Sewing. V-TECS Guide.
INSTITUTION South Carolina State Dept. of Education, Columbia. Office of Vocational Education.
PUB DATE 90
NOTE 204p.
PUB TYPE Guides - Classroom Use - Teaching Guides (For Teacher) (052)

EDRS PRICE MF01/PC09 Plus Postage.
DESCRIPTORS Building Operation; *Competency Based Education; Criterion Referenced Tests; *Fashion Industry; Job Performance; Labor Standards; Occupational Safety and Health; Personnel Policy; Postsecondary Education; Quality Control; Secondary Education; *Sewing Instruction; *Sewing Machine Operators; State Curriculum Guides; Teamwork; Time Management; *Trade and Industrial Education; Work Attitudes

ABSTRACT

This industrial sewing guide is a compilation of duties, tasks, performance objectives, and performance guides that deals with the psychomotor aspect of an occupation. The guide addresses the three domains of learning: psychomotor, cognitive, and affective. Each unit provides job-relevant tasks, standards of performance, source of standard, conditions of performance, enabling objectives, resources, teaching activities, criterion-referenced questions and answers, a practical application, and a checklist for evaluating student performance. The following units are included: (1) organizing and planning; (2) directing and implementing; (3) inspecting and evaluating; (4) operating industrial sewing machines; and (5) maintaining equipment and work station. Six appendices include (1) task list and job titles; (2) definitions of terms; (3) tools, equipment, and work aids; (4) sources of standards (7 entries); (5) state-of-the-art literature (14 listings); and (6) bibliography (8 listings). (NLA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED328719

V-TECS GUIDE

FOR

INDUSTRIAL SEWING

Prepared by

Charles G. Moore
State Supervisor
Trade and Industrial Education

Roger C. Goupil
Project Coordinator

Robert T. Benson, Ed.D.
Technical Coordinator

SOUTH CAROLINA DEPARTMENT OF EDUCATION

Dr. Charlie G. Williams
State Superintendent of Education

Sidney B. Cooper
Deputy Superintendent
Division of Instruction

Dr. Moody Oswald
Director
Office of Vocational Education

South Carolina Department of Education: An Equal Opportunity Agency
Columbia, South Carolina 29201

CE052885

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

1990

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

E L Knight

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ACKNOWLEDGMENTS

The Industrial Sewing V-TECS Guide was developed from the Industrial Sewing V-TECS Catalog by a committee of Commercial Garment and Apparel Construction instructors from South Carolina. Special appreciation is extended to the following teachers who devoted their time and talents to this project:

Debbie Bjork
Fairfield County Vocational Center
Winnsboro, SC

Bobbie Hawkins
Floyd D. Johnson Vocational Center
York, SC

Miriam Seay
R. D. Anderson Vocational Center
Moore, SC

The Office of Vocational Education staff members who assisted the committee were Steve Marlowe, Trade and Industrial Education Consultant; Janit Kangis, Trade and Industrial Education Consultant; Shirley Cullen, Sex Equity Consultant; Barbara Richardson, Word Processing Operator; and Linda Gordon, Word Processing Operator.

Upon completion of the writing of the Industrial Sewing V-TECS Guide, six educators and six incumbent workers were selected to field review the materials for validity and reliability. These individuals are commended for their efforts in assisting with this project:

Cary Friedman
Aiken Industries
Aiken, SC

Shirley Fulmer
Needle Trades Association
Columbia, SC

Halestine Grate
Finklea Career Center
Loris, SC

Sarah Greene
Town & Country
Lugoff, SC

Dorothy Lambert
Andrews High School
Andrews, SC

Katherine Lee
H.B. Swofford AVC
Inman, SC

June Rochester
Anderson I & II Vocational Center
Williamston, SC

Ken Slotnick
Salley Manufacturing Company
Salley, SC

Betty Smith
Wagener-Salley High School
Wagener, SC

Florence Turner
B.J. Skelton Career Center
Easley, SC

Jim Walsh
Lexington Sportswear
Lexington, SC

Johnny Winkler
Oxford Industries
Gaffney, SC

TABLE OF CONTENTS

ACKNOWLEDGMENTS ii

INTRODUCTION 1

USE OF A V-TECS GUIDE 3

UNIT OUTLINE

ORGANIZING AND PLANNING 4

DIRECTING AND IMPLEMENTING 9

INSPECTING AND EVALUATING 68

OPERATING INDUSTRIAL SEWING MACHINES 92

MAINTAINING EQUIPMENT AND WORK STATION 166

APPENDICES

A. Task List and Job Titles 183

B. Definitions of Terms 187

C. Tools/Equipment/Work Aids 193

D. Sources of Standards 195

E. State Of The Art Literature 197

F. Bibliography Compiled By The South Carolina Writing Team . 199

INTRODUCTION

A V-TECS Guide is an extension or a continuation of one or more V-TECS Catalogs. The V-TECS Catalog is a composition of duties, tasks, performance objectives, and performance guides which deal with the psychomotor aspect of an occupation. The catalog can be considered the blueprint of an occupation.

The catalog serves as the foundation for the V-TECS Guide. Experience has shown that the art of learning can be taught while teaching subject matter. A V-TECS Guide provides an efficient method for this process. The Guide addresses the three domains of learning: psychomotor, cognitive, and affective. The following is a brief explanation of each.

Psychomotor

Manipulative skills, such as sharpening a pencil and making a bulletin board display, are representative of activities that are psychomotor in nature. These tasks are identified in a catalog and grouped by duties and objectives. Each performance objective has a performance standard which must be met to demonstrate student proficiency in the manipulative aspect of the task.

Cognitive

Cognition is the mental process by which knowledge is acquired. To perform psychomotor tasks, students must think. Effective thinking is necessary for successful performance of job tasks. Students gain cognition through real and vicarious

experiences. This guide enables the instructor to provide decision-making opportunities for students, thus developing their cognitive skills.

Affective

The affective domain deals with attitudes, interests, and values development. Desirable behavior is the learning outcome of the affective domain. This guide presents activities created to promote an understanding of self and others in a working environment. The instructor is encouraged to use the activities to stress how attitudes, values, and goal attainment influence working relationships and productivity.

USE OF V-TECS GUIDE

A V-TECS Guide is designed to provide job-relevant tasks, performance objectives, performance guides, resources, teaching activities, evaluation standards, and criterion-referenced measures. It may be used with any teaching method the instructor chooses. Although a guide contains suggestions for specific classroom activities for each identified task, teachers are encouraged to be creative in adapting the material to meet the particular needs of their students.

ORGANIZING AND PLANNING

DUTY ORGANIZING AND PLANNING

PERFORMANCE OBJECTIVE 1

TASK

Serve as liaison between operators, maintenance personnel, and manager.

STANDARD OF PERFORMANCE OF TASK

Mediate the dispute between the operator and management. Both parties must be provided an opportunity to express their viewpoints and respond to the viewpoints of each other. The dispute must be resolved to the satisfaction of each party.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Operator dissatisfied with engineering rate change
Company personnel

ENABLING OBJECTIVES

1. Read and interpret Teacher Information Sheet 1-1.
2. Identify motion economy methods that can improve operation being discussed.

RESOURCES

1. Gaetan. **Sewn Products Engineering and Reference Manual**, p. 201.
2. **Careers in Industrial Sewing for the Apparel Manufacturing Industry: Teacher-Student Guide**, American Apparel Association, p. 43.
3. Teacher Information Sheet 1-1.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Define motion economy and the methods used to improve operation.
3. Discuss the supervisor's role as liaison between the operator and management.
4. Discuss suggested phrases in the basic discussion guide, Teacher Information Sheet 1-1.
5. Instruct student to role play the part of liaison between the operator and management.

PERFORMANCE OBJECTIVE 1

CRITERION-REFERENCED MEASURE

Questions

1. The specific objection from the operator was
   a. working conditions.
   b. rate change.
   c. working hours.
   d. lack of work.

2. Which department in the plant handles the request for time study to determine piece rate?
   a. payroll department
   b. production department
   c. engineering department
   d. cutting department

3. After reaching an agreement, the supervisor should check the operator's progress
   a. weekly.
   b. when supervisor has time.
   c. when it suits the operator.
   d. at regularly scheduled intervals.

Answers

1. b.
2. c.
3. d.

Practical Application

Have student serve as liaison between operators, maintenance personnel, and manager.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 1 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 1

TEACHER INFORMATION SHEET 1-1

BASIC DISCUSSION GUIDE: SUGGESTED PHRASES

The following are suggested phrases that may be used to establish a dialogue with an employee. How the dialogue is established will depend to a large extent on the personalities involved. Have student use same phrases in role playing situations.

1. Do you have a moment? I would like to talk to you about your job and see if we can figure out a way to improve it.
2. In observing your work and how you apply yourself, I noticed that the things you do very well are...
3. But, I'm sure you will be concerned about these facts....
4. a) Am I making myself clear? b) Do you think I have interpreted the situation properly? (In the event you are with the operator because she/he was resisting change, you might want to say- Do you know you are resisting the change? Why?)
5. I'm glad you made that point and told me those things.. That may change our thinking somewhat.
6. You may be right. But, these are still the facts which we have to work on to improve...
7. Now, what do you suggest we do to improve...?
8. I'll explain it to you...(Explain why suggestion is no good). Have I made it clear to you we have to look for another suggestion?
9. However, you are on the right track... Do think it would work if you did it this way? Would you try it for me that way now?
10. Good. Now that you have done it several times yourself, would you continue to try it the "new" way, and I will come back to you in...(minutes, days, hours), and we will discuss the pro's and con's of the "new" way we just came up with.
11. I will personally check into what you just told me and get back to you in about...(minutes, hours, days).

CHECKLIST FOR PERFORMANCE OBJECTIVE 1

SERVE AS LIAISON BETWEEN OPERATORS, MAINTENANCE PERSONNEL, AND MANAGER

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Identified specific objections from operator.		
2. Requested engineering department to perform rate study to determine reasons necessitating rate change.		
3. Arranged a conference with the sewing department manager.		
4. Accompanied operator to conference and presented reasons and objections.		
5. Allowed for discussion on reasons for and objections to rate change.		
6. Obtained agreement by both parties on rate change to be utilized.		
7. Implemented agreed-upon or management-dictated suggestions and/or procedures as a means of resolving problem.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DIRECTING AND IMPLEMENTING

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 2

TASK

Stress need for production (speed) and associate with quality.

STANDARD OF PERFORMANCE OF TASK

Implement step-by-step method for improving performance of operation and keeping quality at strict limits.

SOURCE OF STANDARD

South Carolina Writing Team

CONDITIONS FOR PERFORMANCE OF TASK

Employee(s) with low production rates and poor quality
Production standard
Quality control standards

ENABLING OBJECTIVES

1. Read resource material.
2. Make analysis of operation, step-by-step method of performance.
3. Identify quality standards of operation.

RESOURCE

How to Build Industrial Sewing Skills: Student's Manual, Book 4, Singer.

TEACHING ACTIVITIES

1. Assign student to read **Step One: Following the "Methods" (How To Build Industrial Sewing Skills)**, p. 4.
2. Instruct student to practice sewing using method sheet for operation.
3. Assign student to read **Step Two: Making Time and Making Money**, p. 6.
4. Explain standard production, how local industry uses the method of determining rates, and maintaining earning.
5. Assign student to read **Step Three: The Vital Role of Quality Control**, p. 8.
6. Instruct student to examine his/her clothing to see if any defects escaped the manufacturer.
7. Stress the importance of the company's reputation by the quality of work produced by an operator like the student.

PERFORMANCE OBJECTIVE 2

CRITERION-REFERENCED MEASURE

Questions

1. One method of improving operator's production is a step-by-step method called _____.

2. (A) An _____ can help the operator understand the way an operation is to be performed.

3. The system of establishing, maintaining, and checking tolerances is called _____.

Answers

1. method-time-measurement (MTM)
2. analysis sheet of an analysis of operation
3. quality control

Practical Application

Have student meet production standards and quality tolerances.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 2 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 2

STRESS NEED FOR PRODUCTION (SPEED) AND ASSOCIATE WITH QUALITY

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Threaded machine and checked stitching.		
2. Practiced operation for at least 15 minutes.		
3. Sewed at a fast pace.		
4. Sewed with quality.		
5. Developed handling qualities with fast sewing.		
6. Completed operation in target time.		
7. Sewing was within tolerances.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 3

TASK

Counsel employees concerning personal problems.

STANDARD OF PERFORMANCE OF TASK

Counsel an employee in a manner that will not offend the employee. Information about personal problems must be withheld from everyone except an immediate supervisor.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Employee attendance and performance records
Company personnel
Problem employee

ENABLING OBJECTIVES

1. Review a sample company policy manual.
2. Review a sample employee personnel record.
4. Maintain objectivity.

RESOURCES

1. Bittle. **What Every Supervisor Should Know**, p. 282.
2. Teacher Information Sheet 2-1.

TEACHING ACTIVITIES

1. Assign student to read company policy manual or student handbook.
2. Discuss some possible problems and their consequences.
3. Read interview rules.
4. Identify some of the problems that require counseling.
5. Instruct student to role play counseling an employee concerning a personal problem.

PERFORMANCE OBJECTIVE 3

CRITERION-REFERENCED MEASURE

Questions

1. Two important items to review before counseling are _____ and _____.
2. It is important to _____ to the employee before making any comment.
3. Give undivided _____ to the employee while he/she is talking.

Answers

1. company policy manual, employee's personal file
2. listen
3. attention

Practical Application

Have student counsel with employees concerning personal problems.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 3 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 3

TEACHER INFORMATION SHEET 2-1

HOW TO COUNSEL AN EMPLOYEE

Listed below are suggestions that may be used when counseling an employee. Most are a matter of common sense and common courtesy. These suggestions may be reprinted and distributed to the students.

1. Listen patiently to what the employee has to say before making any comments.
2. Refrain from criticizing or offering hasty advice on employee's problems.
3. Never argue with an employee while counseling him/her.
4. Give undivided attention to the employee while he/she is talking.
5. Look beyond the words to what the employee is saying - listen carefully to what he/she is saying to determine if the problem is deeper than what appears on the surface.

CHECKLIST FOR PERFORMANCE OBJECTIVE 3

COUNSEL EMPLOYEES CONCERNING PERSONAL PROBLEMS

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Analyzed employee attendance and performance records, if applicable.		
2. Discussed employee interests and attitudes confidentially with other supervisors.		
3. Arranged for private meeting room.		
4. Called employee for conference.		
5. Set stage for informal discussion. a. Inquired about leisure-time activities. b. Recognized contributions worker had made in job. c. Emphasized importance of teamwork on the job. d. Reviewed attendance policies, if applicable.		
6. Provided opportunities to talk freely about problem.		
7. Inquired about reasons for problem.		
8. Suggested ways employee might deal with problem.		

CHECKLIST FOR PERFORMANCE OBJECTIVE 3

COUNSEL EMPLOYEES CONCERNING PERSONAL PROBLEMS

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
9. Followed-up on employee to determine if problem was resolved.		
10. Counseled with employee again, if necessary.		

APPROVED: YES _____ NO _____

_____

Evaluator's Signature Date

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 4

TASK

Recommend termination of operators who fail to make production requirements.

STANDARD OF PERFORMANCE OF TASK

The recommendation must be clearly stated in writing and include specific instances and/or examples of situations justifying termination.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Company personnel
Employee attendance, safety, production, and training records

ENABLING OBJECTIVES

1. Read sample company policy manual.
2. Know policy on absences and lateness.
3. Understand the use of warning slips.

RESOURCE

1. Bittle. **What Every Supervisor Should Know**, p. 282.
2. Teacher Information Sheet 4-1.

TEACHING ACTIVITIES

1. Read and review company policy manual and union contract, if applicable.
2. Discuss employee's production, attendance records, and safety and training records.
3. Compare employee's record with standard for that job.
4. Define terms used: lay-off, suspension, discharge, terminate, and turnover.
5. Assign student role play recommending the termination of an employee who has failed to make production requirements.

PERFORMANCE OBJECTIVE 4

CRITERION-REFERENCED MEASURE

Questions

1. Poor performance and excessive absences are good reasons for discharge. True or False?

2. If work is not of standard quality an operator may be discharged. True or False?

3. Warning slips are not necessarily given to worker if he is not a member of a union. True or False?

Answers

1. True
2. True
3. False

Practical Application

Have student recommend termination of operators who fail to make production requirements.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 4 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 4

TEACHER INFORMATION SHEET 4-1

This may be used as a student handout and/or the starting point in a dicussion on questions to ask before recommending termination of an employee.

QUESTIONS to ask BEFORE making a decision to recommend termination of an employee:

1. Is policy involved? What is the policy?
2. Am I sure of the facts? Do I know all the circumstances?
3. How did I handle a similar situation in the past?
4. Who can give me advice on this problem?
5. Should I ask advice?
6. Would my supervisor want to talk this over with me first?
7. Does this problem involve the union?
8. If it does involve the union, should I see the union steward or should I check with the labor relations department first?

CHECKLIST FOR PERFORMANCE OBJECTIVE 4

RECOMMEND TERMINATION OF OPERATORS WHO FAIL TO MAKE PRODUCTION REQUIREMENTS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Reviewed attendance records of employee and recorded dates of unexcused absences.		
2. Reviewed quality control records and recorded quality performance levels of employee.		
3. Consulted with supervisors in other sections in which employee had worked, if any.		
4. Reviewed training records for comments of training instructor.		
5. Interviewed operator to obtain information on reasons for absences or poor performance.		
6. Drafted recommendation for termination.		
7. Submitted recommendations to superior.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 5

TASK

Develop safety rules.

STANDARD OF PERFORMANCE OF TASK

The list of rules must be in compliance with OSHA standards and company policies.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Industrial sewing area
OSHA regulations
Company personnel

ENABLING OBJECTIVES

1. Read and interpret the safety rules.
2. Understand how unsafe practices can affect job performance.
3. Observe student at work and determine if he/she is following safe work habits.

RESOURCES

1. **Careers in Industrial Sewing For the Apparel Manufacturing Industry**, American Apparel Manufacturers' Association, p. 6.
2. Teacher Information Sheet 5-1.
3. Teacher Information Sheet 5-2.

TEACHING ACTIVITIES

1. Read and discuss specific safety rules on Teacher Information Sheet 5-1.
2. Describe how accidents can affect students, school, community, and job performance.
3. Assign student to be safety officer each week.
4. Discuss Teacher Information Sheet 5-2.

PERFORMANCE OBJECTIVE 5

CRITERION-REFERENCED MEASURE

Questions

1. The most important safety rule to remember is
   a. keep fingers away from the needle.
   b. be sure the power is off before making any adjustments.
   c. keep feet off treadle when not sewing.
   d. keep scissors away from belt.

2. The purpose of the finger guard is to
   a. make the needle harder to thread.
   b. protect the fabric being sewn from getting caught in the needle.
   c. protect the operator's finger from being stuck with the needle while sewing.
   d. protect the needle from foreign objects.

3. Work stations must be kept neat to
   a. prevent students from falling when walking in aisles.
   b. have a better appearing classroom.
   c. keep students busy cleaning the room.
   d. provide a pleasant atmosphere in which to work.

Answers

1. b.
2. c.
3. a.

Practical Application

Have student develop safety rules.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 5 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 5

TEACHER INFORMATION SHEET 5-1

SUGGESTED SAFETY RULES*

The following safety rules should become habits. A safe operator is a good operator. Some of the rules that safe, experienced operators practice and rules that will be followed in the classroom are as follows:

1. Turn OFF the power before adjusting or cleaning the machine. Be sure the motor is completely stopped before proceeding.
2. Turn the power OFF before removing, adjusting, or inserting the needle.
3. Remove foot from the treadle before changing or adjusting the needle and before adjusting or cleaning the machine. It is a good, safe habit to keep your feet off the treadle any time you do not intend to operate the machine.
4. Take proper care of tools and machines assigned to you. Keep the machine properly cleaned and oiled.
5. Keep the work station neat and the aisles clear.
6. Develop correct lifting and carrying habits.
7. Do not engage in "practical jokes" in the classroom or on the job.
8. Do not attempt to operate a machine for which you have not been trained.
9. Always use a finger or needle guard while sewing.

* **Careers in Industrial Sewing For the Apparel Manufacturing Industry** Education Committee of the American Apparel Manufacturers' Association and The Research and Curriculum Unit for Vocational and Technical Education, Mississippi State University.

PERFORMANCE OBJECTIVE 5

TEACHER INFORMATION SHEET 5-2

HELPFUL HINTS AND SAFETY TIPS

1. Always concentrate on your work. Don't let your mind wander while operating a machine.
2. Turn OFF motor when machine is not running.
3. Use extreme care -- carelessness causes accidents. Be sure before you proceed. If in doubt, don't. Caution is still the best safety device known.
4. Practice good posture.
5. Do not start the machine by turning the hand wheel.
6. Do not use the hand wheel as a brake to stop the machine.
7. Lower the presser foot and needle on a scrap of cloth and turn the motor off when you leave the classroom.
8. Keep hands away from the needle when sewing.
9. Keep your feet off the treadle when threading the machine.
10. Always turn the hand wheel in the direction the machine runs.
11. Remove all threads from the bobbin before refilling.
12. Do not attempt to remove bobbin case from the machine when the needle is down.
13. Always check the machine stitch on a double thickness scrap of material. Is the stitch the correct length? Is the tension properly regulated?
14. To remove work easily, press the knee lifter to the extreme right. This releases the upper tension and the thread pulls easier; then draw the fabric gently toward the back of the machine away from you.

CHECKLIST FOR PERFORMANCE OBJECTIVE 5

DEVELOP SAFETY RULES

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Identified hazardous conditions in sewing area.		
2. Identified OSHA standards.		
3. Reviewed safety manuals.		
4. Acquired rules from similar plants.		
5. Acquired suggestions from sewing, maintenance, and engineering personnel.		
6. Developed tentative rules.		
7. Gained consensus from fellow operators and supervisors.		
8. Gained approval from supervisors.		
9. Reproduced and distributed rules.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 6

TASK

Expedite rush orders.

STANDARD OF PERFORMANCE OF TASK

Bundles must be located and transferred within 10 minutes. Transferred bundles must correspond in number and type to the request.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Order or cut ticket
Company personnel

ENABLING OBJECTIVES

1. Read and interpret the problem.
2. Identify cut ticket and order.
3. Locate specific bundles and tag.
4. Follow up on instructions to be sure they are done correctly.

RESOURCE

Teacher Information Sheet 6-1.

TEACHING ACTIVITIES

1. Assign student to read and interpret the problem.
2. Explain cut tickets and orders.
3. Stress the importance of correct dye lot for matching and bottoms.
4. Show student how to locate bundles (if company uses an in-process spread sheet, show how to read this information).
5. Use red tags or other means of identifying the rush order.
6. Follow up on instructions.

PERFORMANCE OBJECTIVE 6

CRITERION-REFERENCED MEASURE

Questions

1. When locating a rush unit to complete an order it is very important that the units be of the same _____ as the completed units.

2. Follow-up on rush orders should be done every _____ to be sure instructions are being followed.

3. One way to mark a rush order is to use a (an) _____.

Answers

1. dye lot
2. ten minutes
3. red tag

Practical Application

Have student expedite rush orders.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 6 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 6

TEACHER INFORMATION SHEET 6-1

Task: Expedite Rush Orders

Problem:

Order from major customer is complete except for bottom units in one color and two sizes. Deadline for shipment is Thursday in order to reach customer's store for special promotion. How would you handle this problem?

1. Locate cut ticket and order.
2. Be sure lot numbers are the same.
3. Find necessary bundles and tag with rush tag.
4. Give bundles to supervisor with instructions to process immediately.
5. Alert supervisors in other units who will be handling the order.
6. Check progress every ten minutes.
7. Alert shipping department when assignment is completed.

CHECKLIST FOR PERFORMANCE OBJECTIVE 6

EXPEDITE RUSH ORDERS

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Secured order or cut ticket from supervisor making request.		
2. Verified accuracy of ticket.		
3. Located bundle service person.		
4. Provided service person with ticket and specific directions relating to the request.		
5. Checked with requesting supervisor within 10 minutes to see if correct number and type bundles had been delivered.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 7

TASK

Select appropriate size, fiber, and color of thread to match material.

STANDARD OF PERFORMANCE OF TASK

Thread selected must exactly match the size, fiber, and color stated on the cut ticket.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Cut materials
Cut ticket
Various colored threads
Company personnel

ENABLING OBJECTIVES

1. Read Teacher Information Sheets.
2. Prepare samples and threads of various shades.
3. Thread machines with different shades of thread.

RESOURCE

1. Teacher Information Sheet 7-1.
2. Teacher Information Sheet 7-2.

TEACHING ACTIVITIES

1. Assign student to read Teacher Information Sheets.
2. Discuss reasons for selection of colors for solids and plaids or prints.
3. Instruct student to stitch swatches with various shades to determine the best shade to use.
4. Assign student to determine the number of cones needed for job.
5. Assign student to fill out requisition for thread.
6. Instruct student to give thread to operators.

PERFORMANCE OBJECTIVE 7

CRITERION-REFERENCED MEASURE

Questions

1. Thread appears _____ on the cone than the color actually is.
2. When selecting thread for plaids or prints the _____ is the best choice.
3. Size of thread is determined by _____ and _____ _____ of the fabric being sewn.

Answers

1. darker
2. predominant color
3. weight, fiber content

Practical Application

Have student select appropriate size, fiber, and color of thread to match material.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 7 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 7

TEACHER INFORMATION SHEET 7-1

This may be used as a Student Information Sheet.

THREAD FACTS

Most thread used today in the apparel industry is synthetic thread, usually a spun polyester or a core thread.

Select thread at least two shades darker than the fabric. The thread on the cone appears to be darker than it is.

Draw a strand over the fabric to make sure you have the right shade of color. It is best to sew a seam into the fabric to be sure.

When selecting thread for plaids or prints use the predominant color. Usually a darker color is best, but sew in several of the colors to determine which looks better.

PERFORMANCE OBJECTIVE 7

TEACHER INFORMATION SHEET 7-2

Interesting for the instructor to know

American & Efird Thread Mills, Inc.
Mt. Holly, North Carolina 28120

INDUSTRIAL SEWING THREAD

A correctly adjusted sewing machine is essentially a compromise between what the sewing machine manufacturer designed it to do, what the apparel manufacturer desires to accomplish, and the correct selection of the best threads available for the specific sewing operation intended. In this last point mentioned there are choices available for threads, and the specific purpose of this paper is to define some of these choices and to elaborate on some of the differences.

As we go further through the discussion on thread, in our opinion, there are four essential factors that should determine the selection of a particular thread type and size:

1. End-use performance
2. Sewability
3. Durability
4. Appearance

There are three general classifications which may briefly be described as follows:

1. Natural thread fibers - spun cotton and linen.
2. Synthetic fibers - continuous filaments or spun staple forms. This category may be broken down into regenerated cellulosic products (rayon) and thermoplastic-type fibers such as nylon and polyester.
3. Combined fibers, for example our D-core spun threads - a continuous filament bundle of polyester or nylon and a spun staple wrap, usually of cotton.

Of the cotton type, there are three general classifications which cover most applications.

Soft Finish Cotton Thread - This is a cotton thread in its nearest natural form. After being spun and twisted into the desired size, it is treated with a lubricant to insure proper sewing characteristics. This thread usually has an elongation of approximately 7 to 8%. Some elongation is desirable for proper sewing characteristics as it allows for unusual stress during the sewing cycle in forming a stitch.

Mercerized Cotton Thread - Thread has been treated in a caustic solution under tension. Tension applied to the yarn while in the caustic solution, together with gassing of the thread, produces a high luster with which we all are familiar. This process increases the basic yarn tensile by approximately 10 to 12%. Gassing, also part of conventional mercerization, singes the cotton fibers, which increases the sewability and leaves a smooth and even surface upon which the finish lubricant is subsequently applied. Normally, mercerized cotton threads have elongation of approximately 5%.

TEACHER INFORMATION SHEET 7-2 continued

Glace Cotton Threads - These threads are mostly, but not exclusively, manufactured in heavier sizes which have been treated with starch and other chemical agents, dried, and highly polished by high speed brushes under comparatively high temperatures. Resulting thread will resist abrasion during the sewing cycle on products such as leather, canvas goods, and other coarse abrasive fibers. While glace thread in its single end form gains in strength approximately 10%, much of the glace is removed during the sewing cycle. The actual seam produced is not necessarily a great deal stronger than a non-glace thread. Glace thread normally has an elongation of also approximately 5%.

CHECKLIST FOR PERFORMANCE OBJECTIVE 7

SELECT APPROPRIATE SIZE, FIBER, AND COLOR OF THREAD TO MATCH MATERIAL

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Secured cut ticket from adjacent line supervisor.		
2. Reviewed cut ticket.		
3. Noted size, fiber, and color for each operation.		
4. Notified service persons to secure thread from thread room and distribute to operators.		
5. Observed to see that directions were correctly implemented.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 8

TASK

Assign utility operators to positions.

STANDARD OF PERFORMANCE OF TASK

Assign tasks to employees so that work flow is balanced with no buildup between operations.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Sewing situation with work buildup
Company personnel

ENABLING OBJECTIVES

1. Review work-in-process sheets.
2. Identify areas of work buildup.
3. Determine cause of work buildup.
4. Have on-site quality control inspections.

RESOURCES

1. Teacher Information Sheets 8-1, 8-2, and 8-3.
2. **Learn, Grow, and Become,** VICA, Oklahoma Department of Education.

TEACHING ACTIVITIES

1. Assign student to read Teacher Information Sheets.
2. Discuss the causes of work buildup.
3. Determine which cause is responsible for the work buildup.
4. Divide class into groups and give out assignments.
5. Play production game, emphasize teamwork, and give penalities, e.g., one person is late and cannot work for 15 minutes or is absent so that team is one person short.
6. Discuss who takes up the slack.
7. Discuss the role of quality control person.
8. Discuss why quality control is important.

PERFORMANCE OBJECTIVE 8

CRITERION-REFERENCED MEASURE

Questions

1. List two causes of work buildup.
2. An operator trained on numerous jobs in a factory is called a (an) _____ operator.
3. _____ needs to be checked often to be sure instructions are followed.

Answers

1. absenteeism and mechanical problems
2. utility
3. Quality control

Practical Application

Have student assign utility operators to positions.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 8 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 8

TEACHER INFORMATION SHEET 8-1

TASK: Assign Utility Operator to Positions

Utility operators are those operators who have been trained on many machines and operations. Utility operators are able to fill in for the convenience of management to balance work flow.

Work flow can become unbalanced for a number of reasons; most often it is caused by absenteeism and mechanical difficulties. Most sewing machine operators can do more than one operation. It may be possible to combine an operation to relieve a temporary situation. If this is not possible, the utility operator is used.

After determining the area of work buildup and the cause, bring in the supervisor and the quality control person and decide the best way to handle the work buildup. Give out the assignments to utility operators. Be sure instructions are understood. Have the quality control person on site to check quality and be sure instructions are followed.

One of the most frequent causes of work buildup is absenteeism. The importance of being a dependable employee should be stressed frequently.

PERFORMANCE OBJECTIVE 8

TEACHER INFORMATION SHEET 8-2

BECOMING A VICA LEADER
UNIT I

PRODUCTION COMPANY SIMULATION GAME

I. Object - Setting and achieving realistic goals; working as a member of a productive team.

II. Preparation

A. Make a copy of the box pattern that follows for each group.

B. Divide students into groups of approximately six to eight persons.

C. Provide each group with the following materials: one pair of scissors, one roll of tape, pattern for box, and about 150 sheets of construction paper.

III. Play

A. Explain that each group is to act as a company that makes boxes. Each team should decide on a "company name" and elect a supervisor.

B. Demonstrate how to make construction paper boxes, using the pattern that follows.

C. Instruct each "company" to set goals for the number of boxes they plan to produce during each five minute period.

D. Have the supervisor of each company draw slips of paper that have problems written on them before you begin each five minute session.

EXAMPLES: Employees strike (do not allow anyone to work the first two minutes of the next round)

Two employees do not show up for work (two players are taken out of the team)

Two employees are late for work (two players sit out the first minute of the next round)

Equipment was not properly cared for and, consequently, broke down (team cannot use the scissors for the first two minutes of the next round)

Shortage of raw materials (reduce the amount of construction paper available)

Equipment was not properly cared for and, consequently, broke down (team cannot use tape for first minute of the next round)

TEACHER INFORMATION SHEET 8-2 continued

E. Time each work period, and record the goals and actual achievements on the chalkboard as shown in example below.

EXAMPLE/ NUMBER OF BOXES

Period	Company Name		Company Name		Company Name		Company Name	
	Goal	Produced	Goal	Produced	Goal	Produced	Goal	Produced
Period #1	5	2	6	3	3	3	4	3
Period #2								
Period #3								
Period #4								

F. Act as the Quality Control Department and do not accept poorly constructed boxes.

G. Remind the "companies" that the number of boxes produced does not count until they have been delivered to you.

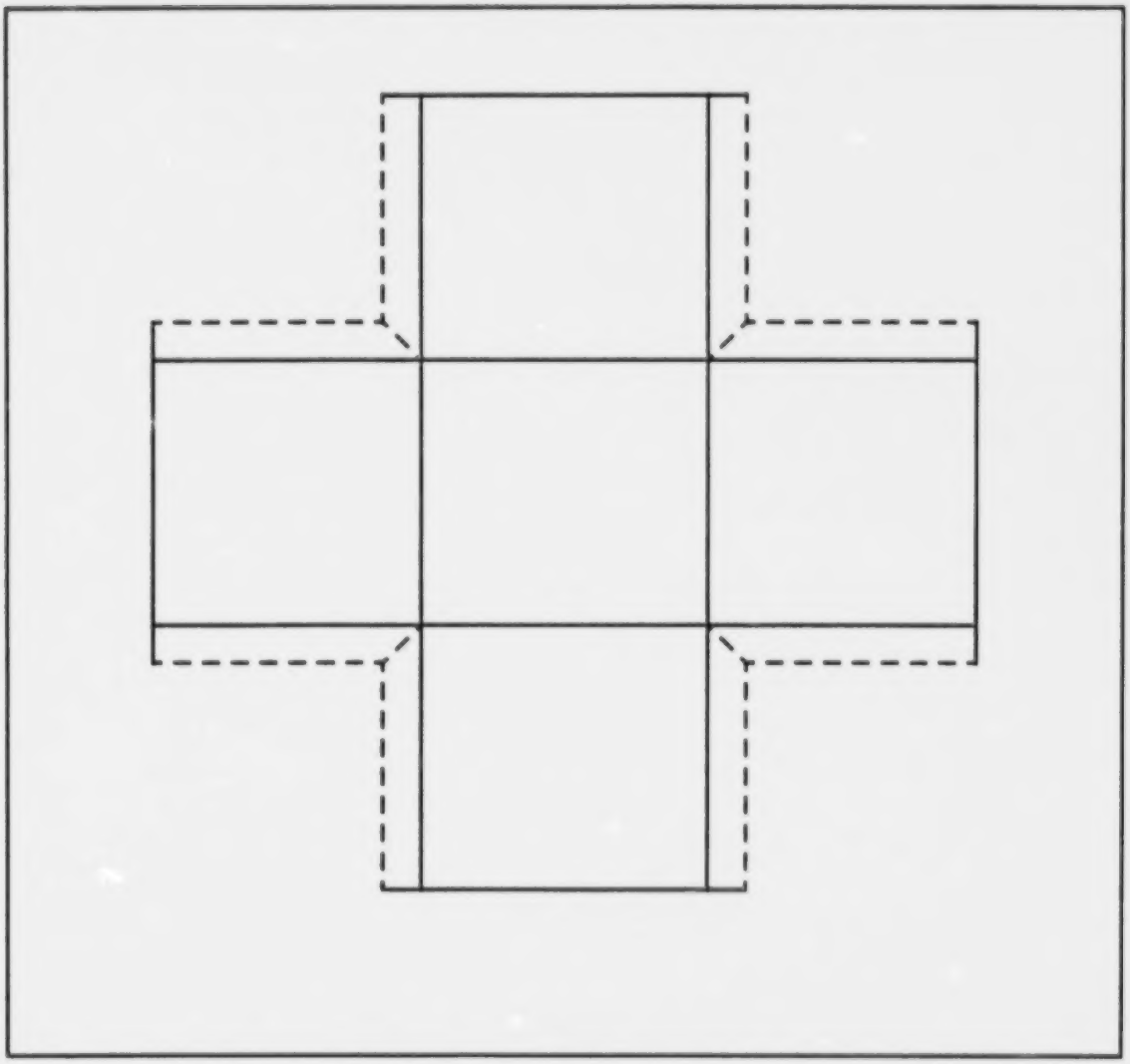
(NOTE: After a few five-minute periods, the companies should be setting and achieving realistic goals.)

H. Have students clean up the scraps of paper from the floor and work area.

PERFORMANCE OBJECTIVE 8

TEACHER INFORMATION SHEET 8-3

BOX PATTERN



CHECKLIST FOR PERFORMANCE OBJECTIVE 8

ASSIGN UTILITY OPERATORS TO POSITIONS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Identified operations in which work built up.		
2. Assigned persons to machines and operations. a. Gained attention of each operator. b. Identified machines and operations. c. Gave brief specific directions to operators.		
3. Periodically checked work output.		
4. Monitored work flow. Shifted operators, if necessary.		
5. Checked with quality control inspector for work quality of assigned workers.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 9

TASK

Keep employee assignment ledger.

STANDARD OF PERFORMANCE OF TASK

Maintain production information for each line operator. Production quantities, operations, and money amounts should correspond with operator gum sheets and cutting sheet information.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Production ledger
Operator's gum sheets
Company personnel

ENABLING OBJECTIVES

1. Write legibly.
2. Calculate accurately.

RESOURCES

1. Teacher Information Sheet 9-1.
2. Gum sheets from local manufacturer.

TEACHING ACTIVITIES

1. Assign student to select the style to be manufactured.
2. Instruct student to break down garment into operations.
3. Assign operations to student.
4. Enter names and operations in ledger or chart.
5. Give out gum sheets and explain how each operation has a ticket to be removed and stick on sheet when bundle is completed.
6. Show student how to count his/her production.
7. Explain the different methods of rates of pay used by local manufacturers.
8. Instruct student to calculate the amount of work completed and enter in chart or ledger.
9. Assign student to turn in ledger to the sewing room manager or business office.

PERFORMANCE OBJECTIVE 9

CRITERION-REFERENCED MEASURE

Questions

1. The purpose of an employee assignment ledger is to
   a. keep track of employee's earnings.
   b. record the amount of units produced.
   c. keep up with the operations an operator performs.
   d. all of the above

2. Information in the employee assignment ledger is of importance to
   a. the employee only
   b. the employee and the supervisor
   c. the employee, supervisor, and production manager
   d. the employee, mechanic, supervisor, and owner

3. The employee assignment ledger, when completed, is given to
   a. the lead operator
   b. the sewing room manager
   c. the shipping manager
   d. the bundle person

Answers

1. d.
2. c.
3. b.

Practical Application

Have student keep employee assignment ledger.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 9 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 9

TEACHER INFORMATION SHEET 9-1

PANTS OPERATION UNIT

OPERATOR	MON.	TUES.	WED.	THURS.	FRI.	WEEKLY
Operator A Front seat seam						
Operator B Front seat seam						
Operator C Side seam						
Operator D Side seam						
Operator E Side seam						
Operator F Inseam						
Operator G Inseam						
Operator H Inseam						
Operator I Serge Waist						
Operator J Serge Waist						
Operator K Enclose elastic						
Operator L Enclose elastic						
Operator M Enclose elastic						
Operator N Hem						
Operator O Hem						
Operator P Inspect						
Operator Q Inspect						

PERFORMANCE OBJECTIVE 9

TEACHER INFORMATION SHEET 9-1 continued

PANTS OPERATION UNIT

OPERATOR	MON.	TUES.	WED.	THURS.	FRI.	WEEKLY
Operator R Press						
Operator S Press						
Operator T						
Operator U						
Operator V						
Operator W						
Operator X						
Operator Y						
Utility Operator						
Utility Operator						
Utility Operator						
Utility Operator						

CHECKLIST FOR PERFORMANCE OBJECTIVE 9

KEEP EMPLOYEE ASSIGNMENT LEDGER

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Reviewed gum sheets for each operator.		
2. Checked order sheet ticket to verify production.		
3. Recorded information in ledger.		
4. Turned ledger to sewing room manager or business office, whichever was directed.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 10

TASK

Conduct sewing room supply inventory.

STANDARD OF PERFORMANCE OF TASK

Sewing room inventory must include the names and counts of parts, supplies, and equipment in a sewing department. Figures must match those of a recount team.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Inventory form
Various sewing supplies and equipment
Calculator

ENABLING OBJECTIVES

1. Determine number of students needed for inventory.
2. Determine department to be inventoried.
3. Distribute forms and necessary tools.

RESOURCES

Teacher Information Sheets 10-1 and 10-2.

TEACHING ACTIVITIES

1. Assign student to read Teacher Information Sheet.
2. Explain the inventory forms to be used.
3. Review the use of the calculator.
4. Assign student to area to be inventoried.
5. Assign recount teams.

PERFORMANCE OBJECTIVE 10

CRITERION-REFERENCED MEASURE

Questions

1. The taking of inventory is sometimes referred to as taking stock. True or False?

2. Inventories are important to determine the amounts of different items the company does not need. True or False?

3. Each team taking inventory should include five persons. True or False?

Answers

1. True
2. False
3. True

Practical Application

Have student conduct sewing room supply inventory.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 10 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 10

TEACHER INFORMATION SHEET 10-1

TASK: PREPARE SEWING ROOM INVENTORY

There is no special way to take an inventory; each manufacturer has its own methods. Probably one of the simplest ways is to have two people work as a team: one counts, weighs, or otherwise measures and calls the descriptions and quantities to the other person, who writes the information on the inventory sheets. The unit value of each article, generally the cost, is written after the description and multiplied by the quantity of the merchandise on hand to determine the total value of such articles.

Each extension is written opposite the respective description and unit price. The extensions are added to determine the total value of all the items listed on the inventory form. This total is referred to as the value of the merchandise inventory. Sometimes that is called the taking of stock.

An inventory is the value of the stock on hand. A manufacturer must determine the value of his stock before he can know the results of operating the plant. The yearly or end of season inventory is determined by counting and listing all fabrics, findings, thread, machine parts, and equipment in the factory.

Use of computer makes keeping track of items easier and it is usually done in most modern apparel companies.

Sometimes it may be necessary to estimate quantities of items: partly used cones of thread, half boxes of buttons, etc.

PERFORMANCE OBJECTIVE 10

TEACHER INFORMATION SHEET 10-2

INVENTORY_____ 19_____ PAGE_____

SHEET NO._____ DEPARTMENT_____ EXTENDED BY_____

CALLED BY_____ LOCATION_____ EXAMINED BY_____

CHECK	QUANTITY	DESCRIPTION	EXTENSION

CHECKLIST FOR PERFORMANCE OBJECTIVE 10

CONDUCT SEWING ROOM SUPPLY INVENTORY

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Separated all work in sewing department into stacks or bundles of dozens and counted.		
2. Counted by box, gross, case, etc., all items in stock room such as thread, tape, zippers, and buttons.		
3. Counted sewing room fixtures and hardware such as machines, tables, chairs, workbenches, and racks. Recorded each manufacturer model and serial number.		
4. Tabulated results.		
5. Verified with recount results.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 11

TASK

Assign bundle person tasks.

STANDARD OF PERFORMANCE OF TASK

Develop a list containing a minimum of seven tasks assigned to bundle persons. Seven tasks listed must coincide with those listed in an instructor checklist.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Industrial sewing situation
Company personnel
Instructor checklist
Job description for bundle person

ENABLING OBJECTIVES

1. Review job description for bundle-aide.
2. Have student develop a list of bundle person tasks, seven minimum.
3. Review instructor checklist.

RESOURCE

Teacher Information Sheets 11-1 and 11-2.

TEACHING ACTIVITIES

1. Discuss job description for bundle person.
2. Help student develop a list of duties for a bundle person.
3. Role play situations that a bundle person would encounter.

PERFORMANCE OBJECTIVE 11

CRITERION-REFERENCED MEASURE

Questions

1. The bundle person checks cut sheets for information concerning the correct cuts and supplies. True or False?

2 The bundle person does not have to run errands for the supervisor if she/he does not want to. True or False?

3. A bundle person may prepare a machine work order in the absence of a supervisor. True or False?

Answers

1. True
2. False
3. True

Practical Application

Have student assign bundle person tasks.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 11 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 11

TEACHER INFORMATION SHEET 11-1

JOB DESCRIPTION

JOB TITLE BUNDLE PERSON

A. Functions

1. Distribute correct cuts and supplies according to cut sheets and production schedule
2. Maintain records relating to supplies and lots on a routine and special basis
3. Be accountable to the department supervisor

B. Responsibilities

1. Supply correct cuts and supplies according to cutting sheets
2. Secure and position supplies for operators
3. Keep cuts in order
4. Sort and separate parts
5. Locate and transfer repairs
6. Move work to operators
7. Maintain housekeeping procedures
8. Run errands for supervisors
9. Prepare machine work order in absence of supervisor

C. Relationships

1. Supervision received
   title
   department supervisor
2. Other internal relationships
   a. Frequent close contact with operators in department regarding work assignments and production quota
   b. Contact with findings department regarding supplies needed

PERFORMANCE OBJECTIVE 11

TEACHER INFORMATION SHEET 11-2

INSTRUCTOR CHECKLIST

INSTRUCTIONS: If the performance is satisfactory, write YES in the space provided. If the performance is unsatisfactory, write NO in the space. Each item must be rated "yes" for acceptable task performance.

Did the list contain the following tasks?

___ 1. Supply correct cuts and supplies according to cut sheets

___ 2. Secure and position supplies for operators

___ 3. Keep cuts in order

___ 4. Sort and separate parts

___ 5. Locate and transfer repairs

___ 6. Move work to operators

___ 7. Maintain housekeeping procedures

___ 8. Run errands for supervisors

___ 9. Prepare machine work order in absence of supervisor

CHECKLIST FOR PERFORMANCE OBJECTIVE 11

ASSIGN BUNDLE PERSON TASKS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Identified operations for which bundle person was responsible.		
2. Learned each operation by name.		
3. Developed tentative list of tasks performed by bundle person.		
4. Gained consensus of list from appropriate persons.		
5. Finalized task list.		
6. Assigned tasks.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 12

TASK

Enforce acceptable housekeeping rules in sewing room.

STANDARD OF PERFORMANCE OF TASK

Develop a set of housekeeping rules designed to involve all workers in a section and cover all items listed in an instructor checklist.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Industrial sewing area
Machine manuals
Company personnel
Instructor checklist

ENABLING OBJECTIVES

1. Read machine manuals.
2. Identify tools and methods of cleaning machines and work area.

RESOURCES

1. **How to Prepare and Care for an Industrial Sewing Machine: Student's Manual, Book 2**, Singer, 1972.
2. Machine manuals supplied by company with new machines.
3. Teacher Information Sheets 11-1, 12-1, 12-2, and 12-3.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Demonstrate the method of cleaning a machine and have student thoroughly clean machines.
3. Explain the importance of keeping the work area clean.
4. Divide students into four groups and explain the assignments and the rotation schedule.
5. Demonstrate each assignment and have student perform duties.

PERFORMANCE OBJECTIVE 12

CRITERION-REFERENCED MEASURE

Questions

1. Who is responsible for keeping the immediate machine area clean?
2. Name the four major items for students to clean in the classroom.
3. What is the best method of removing lint from machines and motors?

Answers

1. the student or machine operator
2. sweepings, tools, fabrics, threads
3. an air hose or type of blower

Practical Application

Have student enforce acceptable housekeeping rules in sewing room.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 12 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 12

TEACHER INFORMATION SHEET 12-1

INSTRUCTOR CHECKLIST

INSTRUCTIONS: If the performance is satisfactory, write YES in the space provided. If the performance is unsastisfactory, write NO in the space. Each item must be rated "yes" for acceptable task performance.

Did the set of rules cover

____ 1. Thread cones and thread scraps?

____ 2. Cloth scraps?

____ 3. Lint, dust, and oil?

____ 4. In-progress work?

____ 5. Work bin and chair arrangement?

____ 6. Soft drink containers?

____ 7. Food wrappers?

____ 8. Machine covers and oil pads?

PERFORMANCE OBJECTIVE 12

TEACHER INFORMATION SHEET 12-2

EQUIPMENT NEEDED FOR HOUSEKEEPING IN CLASSROOM

1. Small stiff brushes for cleaning machines
2. Soft rags for wiping the outside area of the machine and oil drip area
3. Air hose for blowing lint out of machines
4. Small individual brooms for sweeping the machine area
5. Dust pans
6. Large push brooms and dust mops
7. Three or more hand brooms
8. Mop

PERFORMANCE OBJECTIVE 12

TEACHER INFORMATION SHEET 12-3

HOUSEKEEPING AND GENERAL CLASSROOM CLEANUP PROCEDURES

All students are responsible for keeping their machines and immediate work areas clean and the aisles clear.

Four areas for end of class cleanup are the following:

1. Sweeping — Each student will sweep the area around the machine he/she is using and pick up all scraps and trash. Students in the assigned group will sweep the entire classroom and put all trash in the proper containers.

2. Tools — All tools, scissors, and items not assigned to machines will be picked up and returned to proper place.

3. Fabrics — All fabric used during class is to be returned to shelves or storage room and the cutting tables cleared. Check machines and remove all materials.

4. Thread — Any thread not used on the machine must be returned to the shelves and placed neatly according to color or shade.

Each student should tie up the work in process and place it in the designated area. All trims and accessories must be put away.

The students will be divided into four groups for end-of-class cleaning. The groups will rotate weekly. Sample schedule is below.

GROUP	Week 1	Week 2	Week 3	Week 4	
One	Sweep	Thread	Fabric	Tools	
Two	Tools	Sweep	Thread	Fabric	
Three	Fabric	Tools	Sweep	Thread	
Four	Thread	Fabric	Tools	Sweep	

CHECKLIST FOR PERFORMANCE OBJECTIVE 12

ENFORCING ACCEPTABLE HOUSEKEEPING RULES IN SEWING ROOM

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Reviewed machine manuals for cleanup procedures on dust, lint, and oil.		
2. Observed current housekeeping practices in the sewing area.		
3. Asked for and analyzed suggestions from operators, service personnel, and custodians.		
4. Developed draft set of rules and personnel responsible for each.		
5. Reviewed and revised with other supervisors.		
6. Reviewed with and gained approval of supervisors for implementation.		
7. Reproduced and distributed final copies.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY: DIRECTING AND IMPLEMENTING

PERFORMANCE OBJECTIVE 13

TASK

Enforce quality control standards.

STANDARD OF PERFORMANCE OF TASK

Garments manufactured must meet or exceed quality control standards.

SOURCE OF STANDARD

South Carolina Writing Team

CONDITIONS FOR PERFORMANCE OF TASK

Garments with defects
Quality control tags

ENABLING OBJECTIVE

1. Identify defects commonly found in garments.
2. Identify quality control standards.

RESOURCES

1. Gaetan. **Sewn Products Engineering & Reference Manual**.
2. **A Statistical Quality Control Program for the Sewn Products Industry**, U.S. Department of Defense, pp. 178-80.

TEACHING ACTIVITIES

1. Assign student to review Classification of Defects in **A Statistical Quality Control Program for the Sewn Products Industry**.
2. Instruct student to select areas that relate to products he/she is sewing in the classroom.
3. Make a list of standards and have student check garments for defects.
4. Instruct student to classify the defects as critical, major, or minor.

PERFORMANCE OBJECTIVE 13

CRITERION-REFERENCED MEASURE

Questions

1. Name three classifications of defects.
2. All garments sewn should be at _____.
3. Write the definition of quality control.

Answers

1. critical, major, and minor
2. acceptable quality or better
3. Quality control is the assurance that standards of manufacture are being adhered to.

Practical Application

Have student enforce quality control standards.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 13 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 13

ENFORCE QUALITY CONTROL STANDARDS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Listed the standards for each part of the garment.		
2. Checked the garment for defects.		
3. Tagged the defects according to the classification.		
4. Checked with supervisor if there was doubt in determining the defect or quality.		
5. Explained why quality was important to the production of garments.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

INSPECTING AND EVALUATING

DUTY INSPECTING AND EVALUATING

PERFORMANCE OBJECTIVE 14

TASK

Evaluate operator production progress.

STANDARD OF PERFORMANCE OF TASK

The evaluation must include a judgment as to whether the trainee has met training expectations specified by the chart and written recommendations as to how the trainee can improve production.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Trainee's training chart (curve)
Company personnel
Quality control statistics

ENABLING OBJECTIVES

1. Review progress chart for production.
2. Practice production application for one week.
3. Read quality specification for piecework given in previous unit.

RESOURCES

1. Required specifications from quality control department.
2. Teacher Information Sheet 14-1.

TEACHING ACTIVITIES

1. Assign student to read quality specifications for piecework.
2. Plan a field trip and have student observe production.
3. Discuss the purpose of production, quality, and safety.
4. Instruct the class to list five quality specifications.
5. Establish target time for production.
6. Discuss use of a progress calendar.
7. Assign student to role play evaluating an operator's production progress.

PERFORMANCE OBJECTIVE 14

CRITERION-REFERENCED MEASURE

Questions

1. List three quality specifications.
2. If an operator sews 100 collars at 5 cents a collar per hour, what will the operator earn in an hour?
3. If an operator earned 200 dollars for a 40 hour work week, how many collars did she/he sew at five cents per collar?

Answers

1. uniform width of seam, uniform backstitching starting and stopping, and seams flat and free of puckers
2. $5.00
3. 4000

Practical Application

Have student evaluate operator production progress.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 14 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 14

TEACHER INFORMATION SHEET 14-1

PROGRESS CALENDAR

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

CHECKLIST FOR PERFORMANCE OBJECTIVE 14

EVALUATE OPERATOR PRODUCTION PROGRESS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Reviewed progress chart. a. Determined training week. b. Determined trainee efficiency. c. Identified rejects.		
2. Compared trainee efficiency with expected efficiency.		
3. Compared product imperfections with quality control specifications.		
4. Talked with operator about progress. a. Identified areas of strength. b. Identified areas of weakness.		
5. Decided what help operator needed, if any.		
6. Recorded recommendations.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY INSPECTING AND EVALUATING

PERFORMANCE OBJECTIVE 15

TASK

Identify need for additional employees.

STANDARD OF PERFORMANCE OF TASK

- The report must be in such detail and clarity as to form a basis for deciding the exact number of additional employees needed.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Industrial area
Company personnel
Employment and production statistics

ENABLING OBJECTIVES

1. Check records from previous year to determine plant production and overtime.
2. Determine from personnel department plant's downtime.
3. Check to eliminate over speculation and underconsumption.

RESOURCE

Data of projected employees according to the needs from personnel office of particular plant in question.

TEACHING ACTIVITIES

1. Assign student to check record from previous year to determine personnel gain.
2. Instruct student to identify supply and equipment inventory.
3. Assign student to check records for downtime and overtime.
4. Assign student to check records for bottleneck (work pile up).

PERFORMANCE OBJECTIVE 15

CRITERION-REFERENCED MEASURE

Questions

1. Give three reasons why bottlenecks occur.
2. Define downtime.
3. If additional employees are to be added it must be determined from the _____ _____.

Answers

1. absenteeism, downtime, and operator
2. a machine breakdown
3. personnel office

Practical Application

Have student identify the need for additional employees.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 15 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 15

IDENTIFY NEED FOR ADDITIONAL EMPLOYEES

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Determined from personnel office if additional employees were to be added.		
2. Determined from employees the frequency of product damages.		
3. Determined from engineering if new equipment or supplies would increase production.		
4. Checked maintenance and supervisor records for areas of excessive downtime.		
5. Determined from records the quality of equipment and supplies.		
6. Checked equipment and supply inventories.		
7. Completed preprinted requisition form, reporting equipment and supply needs.		

APPROVED: YES ____ NO ____

Evaluator's Signature _____ Date _____

DUTY INSPECTING AND EVALUATING

PERFORMANCE OBJECTIVE 16

TASK

Inspect work stations.

STANDARD OF PERFORMANCE OF TASK

All major work hazards must be identified, as verified by another supervisor.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Industrial sewing area

ENABLING OBJECTIVES

1. Read teacher-prepared checklist for cleanliness of work station.
2. List the hazards of an unsafe environment: thread cones on floor, frayed electrical wiring, and oil on floor.

RESOURCE

Teacher Information Sheet 16-1.

TEACHING ACTIVITIES

1. Demonstrate knowledge of cleanliness and safety within the classroom by the student's performance.
2. Discuss results of observation done by students from checklist.
3. Conduct class discussion on hazards which result in unsafe environment.
4. Explain the use of inspection checklist.
5. Demonstrate work station inspection procedures.

PERFORMANCE OBJECTIVE 16

CRITERION-REFERENCED MEASURE

Questions

1. List three hazards of an unsafe environment.
2. List two good housekeeping rules.
3. What is the maximum noise level?

Answers

1. oil spills on floor, frayed electrical wiring, improper ventilation
2. dispose of all excess scraps on table and work bins, dust machine and work area daily
3. 90 decibels

Practical Application

Have student inspect work stations.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 16 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 16

TEACHER INFORMATION SHEET 16-1

STUDENT WORK STATION INSPECTION CHECKLIST

	AREA	COMMENTS
A.	Cleanliness	
___1.	Machine	_____
___2.	Table	_____
___3.	Work bins	_____
B.	Safety	
___1.	Floor	_____
___2.	Electrical	_____
C.	Auxiliary equipment	
___1.	Chairs	_____
___2.	Placement of bins	_____
D.	Ventilation	
___1.	Air circulation	_____
___2.	Temperature range	_____
E.	Noise levels	
___1.	Noisy	_____
___2.	Quiet	_____
F.	Lighting	
___1.	Bright	_____
___2.	Dim	_____

CHECKLIST FOR PERFORMANCE OBJECTIVE 16

INSPECT WORK STATIONS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Observed work area for the following conditions: a. Cleanliness (1) Scraps, lint, and dust on machine, table, and work bins (2) Oil collected on machine (3) Thread cones strewn in and around work area b. Safety (1) Thread cones and oil on floor (2) Frayed electrical wiring c. Auxiliary Equipment (1) Stable chairs (2) Work bins on tables placed for access and motion economy d. Ventilation (1) Air circulation (2) Temperature range e. Noise levels f. Lighting		
2. Reported findings.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY INSPECTING AND EVALUATING

PERFORMANCE OBJECTIVE 17

TASK

Investigate accidents.

STANDARD OF PERFORMANCE OF TASK

Completed accident report must include all pertinent details such as names of those involved, injuries, equipment involved, cause, etc.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Accident notification
Injured operator
Worker's safety record
Company personnel
Machine injury occurred

ENABLING OBJECTIVES

1. Read safety manual.
2. Identify plant safety procedures.
3. Identify all downtime related to accidents.

RESOURCE

Teacher Information Sheet 17-1.

TEACHING ACTIVITIES

1. Read resource material.
2. Identify plant safety procedures.
3. Demonstrate safety procedures with fire extinguisher.
4. Read safety manual for specific machines.

PERFORMANCE OBJECTIVE 17

CRITERION-REFERENCED MEASURE

Questions

1. The fastest method is the safest method. True or False?
2. Keep objects away from the needle when in operation. True or False?
3. It is not necessary to turn off the machine when changing needles. True or False?
4. It is not necessary to wear safety glasses when operating button machine. True or False?

Answers

1. False
2. True
3. False
4. False

Practical Application

Have student investigate accidents.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 17 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 17

TEACHER INFORMATION SHEET 17-1

SAFETY MANUAL (SUGGESTED)

SEWING

What is SAFETY?

Safety is preventing accidents. About every three seconds someone is injured due to an accident. But what causes accidents? People do! And, since accidents are caused, they can be prevented. Study this handbook to become aware of the safety hazards which can lead to accidents, and learn how to avoid them. Learn to make safety a cooperative program. Everyone must look out for himself and everyone else, too. Saety is everyone's business!

Safety in the Sewing Room

Practice good safety habits in the work setting by knowing the hazards there.

1. Most important, enter the work setting with a good safety attitude.
2. Know your machine and keep it in good operation.
3. Dress appropriately and use personal protective equipment.
4. Practice good housekeeping.
5. Practice good health habits.
6. Practice fire prevention.
7. Take good care of your tools and know how to use them properly.

1. Attitude

Having a good safety attitude is foremost in any safety program. Attitudes are important because they affect how you are, what you do and say, and how you feel. A positive safety attitude means you will be more "safety conscious." In short, you will be more careful. Everyone benefits from a good safety attitude. Practicing these simple rules will help you develop a good safety attitude.

a. Be sincerely interested in your welfare and that of others.

b. Don't take shortcuts. Being faster doesn't mean it's safer.

c. Enjoy your work, but leave horseplay out.

TEACHER INFORMATION SHEET 17-1 continued

d. Have consideration and respect for the rights of others.

e. Put aside negative thinking.

f. Believe in yourself; you ARE special!

g. Do the best job you can do.

2. Your Machine

Your machine is your most important tool. Use it properly and it will work well for you and make you money. However, your machine can be very dangerous when not treated with caution and respect.

a. Never operate a machine with which you are not totally familiar!

b. Keep objects away from the needle when operating the machine.

c. Be sure feet are not on treadle when changing or threading needle.

d. Always check your needle to see that it is not damaged and that it is properly set before sewing.

e. Keep objects and loose thread away from the motor belt.

f. Do not use a power machine when the instructor is not present.

g. Do not operate machine with presser foot rubbing against the feed dog. This will prematurely wear out these parts.

h. Turn machine off before cleaning or adjusting.

i. Only make those adjustments which you have been instructed to make.

j. Turn the machine off immediately and notify your instructor if it makes a funny noise.

Anytime you prepare to use a power machine take time to go through these simple steps. It will save you a lot of time in the long run.

ALWAYS do the following:

a. Check needle set screw to be sure it is tight and pull down on needle to make sure it will not come out.

b. Check to be sure you have your finger guard in place and that the presser foot is held tightly in place.

TEACHER INFORMATION SHEET 17-1 continued

c. Make sure you have the right needle and that it is in the needle bar correctly.

d. Make sure there are no objects at the motor belt.

e. Check to see that the machine is threaded correctly and that the thread is not hung up on anything.

f. Check to see that the are are no missing parts and that all parts are correctly in place.

3. Proper Dress and Eye Protection

Proper dress is important. Loose clothing in the industry can be hazardous due to rotating equipment. Good shoes are a must, also. Open-toed shoes do not offer your feet much protection from falling objects or stubbing of toes. Long hair or flowing neck ties should be kept away from the rotating parts of the machine, like the hand wheel. When dressing for the job keep these rules in mind:

a. Work clothes should fit well with no loose flaps or strings.

b. Never carry sharp objects in your pockets or mouth.

c. Always wear eye protection where required.

d. Keep long hair or dangling jewelry away from hand wheel.

4. Housekeeping

A messy shop is not a safe shop. Practice good housekeeping habits.

a. Keep floors and aisles clear.

b. Put tools away when not in use.

c. Put supplies away when finished and place scraps in proper container.

d. Keep your machine oiled and clean.

5. Health and Hygiene

Practice good hygiene and protect your health while on the job. Your health is your most precious asset and is hard to recover when damaged. Poor health interferes with work by slowing you down, and it can be a hazard. Good health and hygiene is an integral part of your safety program.

a. Keep your hands clean. The germs on your hands could penetrate a simple pin prick and cause a serious infection.

TEACHER INFORMATION SHEET 17-1 continued

b. Practice good posture while sitting or standing. Never maintain one position for a long period of time. Shifting your weight prevents muscle fatigue.

c. Keeping your back supported while sitting will prevent sore back muscles.

d. Avoid lifting anything too heavy. It is surprisingly easy to cause permanent damage to your back.

e. Wear glasses if they have been prescribed for you. Have your eyes checked often. Sewing is very strenuous on the eyes and requires excellent vision.

f. Be sure you have the proper amount of light.

6. Fire Hazards

Know how to spot a potential fire hazard and report it immediately.

a. Look for loose or frayed wires that could start a fire or cause electrocution.

b. Keep combustible materials away from heat or flame.

c. Know fire exits and location of fire extinguishers and how to use them.

d. Never leave hot iron lying on flammable surface. Always rest iron on hot plate.

e. Never unplug an item by the cord; always hold the plug to remove it from the wall socket.

7. Tools

Your tools are necessary in your trade. They do things you otherwise would not be able to do. Know how to use them properly.

a. When handing scissors to another, hold them by the blade and pass the handles first.

b. Always keep the blades of scissors closed when not in use.

c. To use a screwdriver, select one that fits the screw you must turn. Push on the screw as you turn so that the blade of the screwdriver will not slip out of the screw slot. Turn clockwise to tighten and counterclockwise to loosen.

TEACHER INFORMATION SHEET 17-1 continued

d. Replace worn screws.

e. DO NOT use scissors, snips, or bobbins as screwdrivers. This will damage them and may cause injuries.

f. Keep tools off the floor. Always put away when not in use.

g. NEVER THROW ANY TOOLS.

PERFORMANCE OBJECTIVE 17

TEACHER INFORMATION SHEET 17-2

FIRST AID

Prompt treatment can keep minor injuries from becoming major ones.

1. CUTS and SCRAPES
   Clean and bandage minor surface wounds. Apply direct pressure to control severe bleeding. If bleeding continues, elevate wounded area. Use torniquet only as a last resort for critical injuries. SEE A PHYSICIAN.

2. CHEMICALS on SKIN or in EYES
   Rinse thoroughly--5 minutes under cool running water. If you have blisters, irritation, or persistent pain, see your PHYSICIAN.

3. MINOR BURNS and SCALDS
   Soak in cool water; don't apply grease or ointment. If skin is blistered or broken, cover with a sterile dressing. You may apply aloe juice or vitamin E. All serious burns should be seen by a PHYSICIAN.

4. OBJECTS in EYES
   Close eyes -- DON'T RUB. Tears should wash out the material. Wash with water; avoid wiping or probing. If tears or plain water do not give relief, SEE YOUR PHYSICIAN. Note: Something small like a speck of metal may be removed by gently dabbing with corner of a tissue.

5. ELECTRICAL SHOCK
   If victim is in contact with LIVE electricity, SHUT OFF POWER before you touch him/her, THEN, as needed, treat for
   ASPHYXIATION - provide artificial respiration
   SHOCK - keep warm, lower head
   BURNS - see above
   GET MEDICAL AID PROMPTLY!

REPORT ACCIDENTS IMMEDIATELY

CHECKLIST FOR PERFORMANCE OBJECTIVE 17

INVESTIGATE ACCIDENTS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Determined extent of injury.		
2. Questioned injured operator as to cause(s) of accident.		
3. Checked worker's previous safety record.		
4. Inspected machine involved, if any. Inspected area where accident occurred.		
5. Requested maintenance personnel to examine equipment for possible malfunctions, if applicable.		
6. Formulated conclusions.		
7. Completed accident report form.		
8. Furnished superior copy of report.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY INSPECTING AND EVALUATING

PERFORMANCE OBJECTIVE 18

TASK

Identify need for additional equipment.

STANDARD OF PERFORMANCE OF TASK

Submit a written request for equipment or supplies. Required information must be provided in the space given on the preprinted form. The form must not be returned for reaccomplishment.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Equipment and supply inventories
Employment and production statistics
Preprinted forms
Company personnel

ENABLING OBJECTIVES

1. Identify equipment need by previous inventory.
2. Describe the equipment necessary for the style and types of items to be produced.

RESOURCES

1. Production/inventory records.
2. Requisition form.

TEACHING ACTIVITIES

1. Assign student to review resource material.
2. Demonstrate the method of % increase of plant production.
3. Assign student a mock requisition form to be completed based on % of increase.
4. Assign student to determine the equipment need based on production statistics (increase _____ %).

PERFORMANCE OBJECTIVE 18

CRITERION-REFERENCED MEASURE

Questions

1. If production increases by 10%, a factory with 100 operators will need to increase by _____ machines.

2. If a factory increases production by 50%, how much additional equipment will be needed?

3. What three sources of information would determine production statistics?

Answers

1. 10
2. 50 machines
3. personnel, engineering, and supervisor records

Practical Application

Have student identify need for additional equipment.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 18 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 18

IDENTIFY NEED FOR ADDITIONAL EQUIPMENT

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

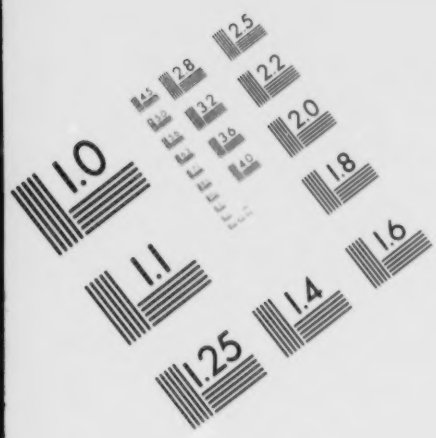
DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

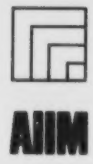
ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Determined from personnel office if additional employees were to be added.		
2. Determined from employees the frequency of product damages.		
3. Determined from engineering if new equipment or supplies would increase production.		
4. Checked maintenance and supervisor records for areas of excessive downtime.		
5. Determined from records the quality of equipment and supplies.		
6. Checked equipment and supply inventories.		
7. Completed preprinted requisition form, reporting equipment and supply needs.		

APPROVED: YES ____ NO ____

Evaluator's Signature _____ Date _____

OPERATING INDUSTRIAL SEWING MACHINES



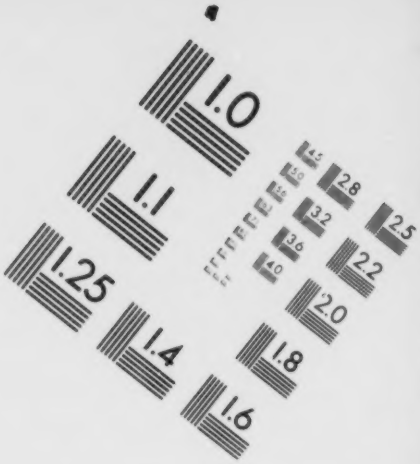


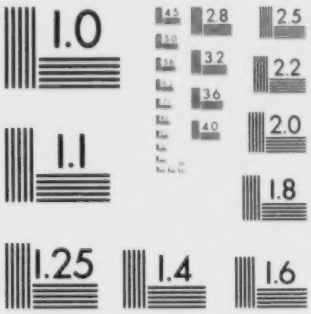
AIIM

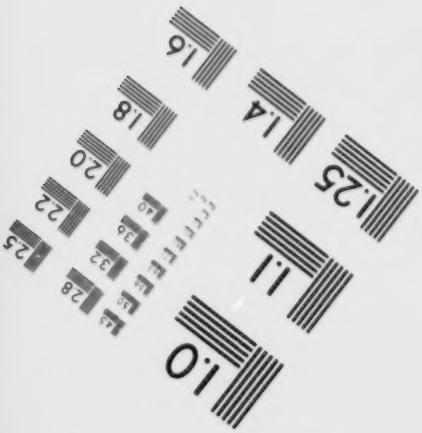
Association for Information and Image Management

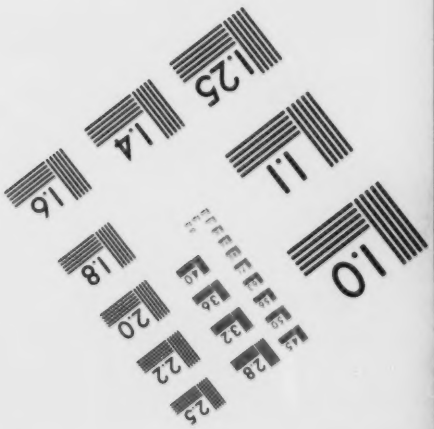
1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910

301/587-8202









MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 19

TASK

Place bobbin on bobbin winder.

STANDARD OF PERFORMANCE OF TASK

Wind a bobbin as the machine operates. The bobbin must be wound evenly to capacity, with thread even with or slightly lower than the sides of the bobbin.

SOURCE OF STANDARD

Walcoff. **Industrial Needle Trades**, p. 68.

CONDITIONS FOR PERFORMANCE OF TASK

Thread
Machine-mounted bobbin winder
Bobbin

ENABLING OBJECTIVES

1. Read teacher-prepared handout on placing bobbin on bobbin winder.
2. Read manual on placing bobbin winder on specific machine.
3. Demonstrate the correct process in bobbin winding.

RESOURCE

Teacher Information Sheet 19-1.

TEACHING ACTIVITIES

1. Demonstrate correct procedure on bobbin placement.
2. Assign student to read resource material.
3. Instruct student to demonstrate placing bobbin on winder.

PERFORMANCE OBJECTIVE 19

CRITERION-REFERENCED MEASURE

Questions

1. Bobbin thread should be about _____ inches long and left hanging below bobbin case.
2. The _____ should be released to replace bobbin in machine.
3. Bobbin case must go into slot and _____ on post.

Answers

1. 8
2. latch
3. lock

Practical Application

Have student place bobbin on bobbin winder.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 19 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 19

TEACHER INFORMATION SHEET 19-1

WINDING THE BOBBIN

Following are the steps to follow when winding the bobbin on a machine-mounted bobbin winder.

1. Remove any leftover thread on the bobbin. Place bobbin on shaft.
2. Adjust bobbin winder to determine amount of thread to be wound on bobbin.
3. Feed thread over thread guide on top of spool stand and through hole.
4. Pull thread between tension discs emerging at point, keeping thread taut.
5. Push lever forward. If thread doesn't spread evenly when machine is in operation, loosen screw and turn tension bracket in either direction until thread winds evenly.

CHECKLIST FOR PERFORMANCE OBJECTIVE 19

PLACE BOBBIN ON BOBBIN WINDER

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Removed any leftover thread on bobbin. Placed on shaft.		
2. Adjusted machine to determine amount of thread to be wound on bobbin.		
3. Fed thread over thread guide on top of spool stand and through hold.		
4. Pulled thread between tension discs emerging at point, keeping thread taut.		
5. Wound thread around bobbin at least three rounds in direction of bobbin turn.		
6. Pushed lever forward. If thread wasn't spread evenly when machine was in operation, loosened screw and turned tension bracket in either direction until thread wound evenly.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 20

TASK

Tie on thread and thread sewing machine.

STANDARD OF PERFORMANCE OF TASK

Thread the machine following the prescribed threading path. The knot must be a square knot and secure so that the thread ends do not separate.

SOURCE OF STANDARD

Walcoff. **Industrial Needle Trades,** pp. 96-97.

CONDITIONS FOR PERFORMANCE OF TASK

Different colored thread cone
Scissors

ENABLING OBJECTIVES

1. Demonstrate correct methods of tying on thread for changing of thread in machine.
2. List the correct order of tying on thread.

RESOURCE

Teacher Information Sheet 20-1.

TEACHING ACTIVITIES

1. Demonstrate correct method of tying on thread.
2. Discuss with student steps in correct method of tying on thread.
3. Assign student to demonstrate his/her knowledge of tying on thread.

PERFORMANCE OBJECTIVE 20

CRITERION-REFERENCED MEASURE

Questions

1. Changes in thread (either new color or near-spent thread) cannot be accomplished without rethreading the machine. True or False?

2. Thread should be cut near the cone True or False?

3. To connect the ends of the old and new thread, a knot should be made. True or False?

4. The _____ is raised to release top tension.

5. To rethread with new color, pull tied thread through machine to needle and clip. True or False?

Answers

1. False
2. True
3. True
4. pressure foot
5. True

Practical Application

Have student tie on thread and thread sewing machine.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 20 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 20

TEACHER INFORMATION SHEET 20-1

TIE ON THREAD AND THREAD SEWING MACHINE

Tie on Thread

1. Remove near-spent or different color thread cone from stand.
2. Pull thread from cone.
3. Cut thread near cone.
4. Place new thread spool on thread stand.
5. Pull thread from new spool.
6. Tie new and old thread ends securely together in a square knot.
7. Clip leftover threads near the square knot.
8. Raise knee lifter to release top tension.
9. Pull original thread, knot, and new thread through machine head guide and eye of needle.
10. Because the knot usually cannot pass through the needle, cut original thread off at the knot. Rethread needle and replace under presser foot.
11. Resume sewing.

Thread Sewing Machine

Make sure power is turned off; then proceed with the following steps to thread the sewing machine.

1. Turn hand wheel so that needle is at highest point.
2. Place thread through holes in spool pin.
3. Draw thread through thread retainer guide.
4. Depress knee lifter to open tension discs.
5. Place thread between discs of tension assembly and over check spring. If incorrectly placed, the stitches will look correct on top but not underneath.
6. Place thread under slack thread regulator. If properly placed, the stitches will be accurate.
7. Pull thread up through take up eyelet.
8. Pull thread through needle bar guide.
9. Depress knee lifter to release needle tension guide.
10. Thread end should be snipped clean with scissors before inserting in needle. Be sure that no "whiskers" are on end of snipped thread. Draw thread through eye needle from left to right or from outside to inside of needle.

The needle is threaded from the long groove side to the short groove side. The thread is then drawn through the presser foot to the back of the machine. The long groove side is on the left or outside of the needle.

CHECKLIST FOR PERFORMANCE OBJECTIVE 20

TIE ON THREAD AND THREAD SEWING MACHINE

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Removed near-spent or different colored thread cone from stand.		
2. Pulled thread from cone.		
3. Cut thread near cone.		
4. Placed new thread spool on thread stand.		
5. Pulled thread from new spool.		
6. Tied new and old thread ends securely together in a square knot.		
7. Raised knee lift to release top tension.		
8. Pulled original thread tail, knot, and new thread through machine head and needle.		
9. Cut original thread off behind knot.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 21

TASK

Insert bobbin in bobbin case; remove bobbin case and bobbin.

STANDARD OF PERFORMANCE OF TASK

The bobbin must be free of the case, and the task must be performed without the operator changing positions.

SOURCE OF STANDARD

How to Prepare and Care for an Industrial Sewing Machine: Student's Manual, Book 2, Singer, p. 9.

CONDITIONS FOR PERFORMANCE OF TASK

Bobbin Case
Industrial sewing machine
Brush
Tools
Bobbin

ENABLING OBJECTIVES

1. Read steps in replacing bobbin in case from checkoff list.
2. List in order the correct steps in replacing bobbin in case.
3. Demonstrate correct method of replacing bobbin in case.

RESOURCE

Teacher Information Sheet 21-1.

TEACHING ACTIVITIES

1. Demonstrate correct method of removing bobbin from case and inserting bobbin.
2. Instruct student to list five steps in replacing bobbin.
3. Assign student to demonstrate correct methods of removing bobbin and inserting bobbin in bobbin case.

PERFORMANCE OBJECTIVE 21

CRITERION-REFERENCED MEASURE

Questions

1. All leftover thread must be removed from bobbin case. True or False?
2. Dirt and lint do not get in the bobbin case. True or False?
3. Release latch to remove bobbin. True or False?

Answers

1. True
2. False
3. True

Practical Application

Have student insert bobbin in bobbin case and remove bobbin case and bobbin.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 21 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 21

TEACHER INFORMATION SHEET 21-1

REMOVING AND REPLACING A BOBBIN

Removing the Bobbin Case

These are the steps to follow when removing the bobbin from an industrial sewing machine.

1. Make sure the power is off.
2. Apply slight toe pressure to treadle to release clutch.
3. Turn hand wheel to bring needle bar to its highest point.
4. Remove feet from treadle.
5. Reach beneath bed of machine with left hand. Open latch of bobbin case and pull case free from the center post of the hook.
6. Release the latch above machine. The bobbin will drop out into your right hand.
7. Examine bobbin case for lint or dirt. Clean with brush if necessary.
8. Remove any leftover thread from the bobbin before rewinding.

Replacing a Wound Bobbin

1. Hold the bobbin case with slot near top.
2. Place rewound bobbin in case with thread unwinding in a counterclockwise direction to the open side of the case.
3. Pull thread into bobbin case slot.
4. Draw thread down and under case spring.
5. Turn bobbin case over. Draw thread up and into delivery eye, leaving about 4 inches (10 cm) of thread outside the case.
6. Hold bobbin case latch open. Replace the case on the center post of the hook.
7. Release latch, making sure that loose thread end is free.
8. Press case back until latch catches in groove on post with a click.
9. Grasp end of needle thread with left hand.
10. Release clutch with treadle by slight toe pressure.
11. Turn handwheel in the direction that the machine runs (counterclockwise) until needle has gone down, come up, and returned to the highest point.
12. Pull needle thread until a loop of bobbin thread appears.
13. Grasp bobbin loop and pull until end is free.
14. Place both thread ends to the rear and under presser foot.

CHECKLIST FOR PERFORMANCE OBJECTIVE 21

INSERT BOBBIN IN BOBBIN CASE AND REMOVE BOBBIN CASE AND BOBBIN

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete eacn step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Verified that power was off.		
2. Applied slight toe pressure to treadle to release clutch.		
3. Turned handwheel to bring needle bar to its highest point.		
4. Reached beneath bed of machine with left hand, opened latch of bobbin case, and pulled case free from the center post of the hook.		
5. Released the latch; the bobbin dropped out.		
6. Examined bobbin case for lint or dirt and cleaned with brush, if necessary.		
7. Removed any leftover thread from the bobbin before rewinding.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 22

TASK

Replace bobbin in case and bring up bobbin thread.

STANDARD OF PERFORMANCE OF TASK

Upon replacement, the case must be secure with the bobbin rotating freely in a counterclockwise direction to the open side of the case. Both bobbin and machine thread ends must be free, located to the rear, and under the pressure foot.

SOURCE OF STANDARD

How to Prepare and Care for an Industrial Sewing Machine: Student's Manual, Book 2, Singer, p. 9.

CONDITIONS FOR PERFORMANCE OF TASK

Bobbin case
Industrial sewing machine
Thread
Bobbin
Tools

ENABLING OBJECTIVES

1. Read steps in replacing bobbin in case and bringing up thread.
2. List in order the correct steps in replacing bobbin in case.
3. Demonstrate correct methods of replacing bobbin in case.

RESOURCES

1. Teacher Information Sheet 21-1.
2. **How to Prepare and Care for an Industrial Sewing Machine: Student's Manual, Book 2**, Singer, p. 9.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Assign student to list five steps in replacing wound bobbin.
3. Instruct student to demonstrate correct method of replacing wound bobbin.

PERFORMANCE OBJECTIVE 22

CRITERION-REFERENCED MEASURE

Questions

1. The _____ should be released to replace bobbin in machine.
2. Hold needle thread with left hand and turn hand wheel _____ for needle to go down and catch bobbin thread.
3. Bobbin case must go into slot and _____ on post into proper position.

Answers

1. latch
2. toward you
3. lock

Practical Application

Have student replace bobbin in case and bring up bobbin thread.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 22 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 22

REPLACE BOBBIN IN CASE AND BRING UP BOBBIN THREAD

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Held the bobbin case with slot near top.		
2. Placed rewound bobbin in case, with thread unwinding in a counterclockwise direction to the open side of the case.		
3. Pulled thread into bobbin case slot.		
4. Drew thread down and under case spring.		
5. Turned bobbin case over. Drew thread up and into delivery eye, leaving about 4 inches of thread outside the case.		
6. Held bobbin case latch open and replaced the case on the center post of the hook.		
7. Released latch, making sure that loose thread end was free.		
8. Pressed case back until latch caught in groove on post with a click.		
9. Grasped end of needle thread with left hand.		
10. Released clutch with treadle by slight toe pressure.		

CHECKLIST FOR PERFORMANCE OBJECTIVE 22

REPLACE BOBBIN IN CASE AND BRING UP BOBBIN THREAD

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
11. Turned handwheel counterclockwise until needle had gone down, come up, and returned to the highest point.		
12. Pulled needle thread until a loop of bobbin thread appeared.		
13. Grasped bobbin loop and pulled until end was free.		
14. Placed both thread ends to the rear and under pressure foot.		

APPROVED: YES _____ NO _____

Evaluator's Signature Date

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 23

TASK

Change needles.

STANDARD OF PERFORMANCE OF TASK

Once replaced, the needle bar screw must be tight and the long groove on the needle must be facing the last thread.

SOURCES OF STANDARD

Mississippi Writing Team Supervisor
How to Prepare and Care for an Industrial Sewing Machine: Student's Manual, Book 2, Singer, p. 6.

CONDITIONS FOR PERFORMANCE OF TASK

Sewing machine with dull/bent needle
Screwdriver
New needle

ENABLING OBJECTIVES

1. Demonstrate ability to correctly use screwdriver.
2. Identify damaged needle.

RESOURCE

Teacher Information Sheet 23-1.

TEACHING ACTIVITIES

1. Instruct student to identify parts of a needle.
2. Write in sequence the steps in replacing a needle.
3. Demonstrate changing a needle.

PERFORMANCE OBJECTIVE 23

CRITERION-REFERENCED MEASURE

Questions

1. The first step in changing a needle is _____.
2. The long groove of the needle is facing extreme _____.
3. If the needle is not in correctly the machine will _____.

Answers

1. turning off machine
2. left
3. skip stitches

Practical Application

Have student change needles.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 23 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 23

TEACHER INFORMATION SHEET 23-1

PROCEDURE FOR CHANGING NEEDLES

Tools and supplies: screwdriver, new needle

1. Turn off machine.
2. Turn handwheel until needle bar is at highest point.
3. Grasp old needle on shank.
4. With remaining hand, loosen needle bar screw with screwdriver.
5. Remove old needle and discard.
6. Insert new needle into bar with long groove facing the last thread guide.
7. Retighten needle bar screw.
8. Check position of needle by turning handwheel one cycle.

CHECKLIST FOR PERFORMANCE OBJECTIVE 23

CHANGE NEEDLES

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Turned off machine.		
2. Turned handwheel until needle bar was at highest point.		
3. Grasped old needle on shank.		
4. Loosened needle bar screw with screwdriver.		
5. Removed old needle and discarded.		
6. Inserted new needle into bar with long groove facing the last thread guide.		
7. Retightened needle bar screw.		
8. Checked position of needle by turning handwheel one cycle.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 24

TASK

Match and position pieces of garments.

STANDARD OF PERFORMANCE OF TASK

Correctly position related garment parts together. Upon visual inspection after parts have been sewn, the smaller parts must match exactly the markings on the larger parts.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor
How to Prepare and Care for an Industrial Sewing Machine: Student's Manual, Book 2, Singer, p. 12.

CONDITIONS FOR PERFORMANCE OF TASK

Related garment parts to be sewn

ENABLING OBJECTIVES

1. Identify stacks of material to be assembled.
2. Separate small parts from large parts.

RESOURCE

Analytical Method - Operator Training Manual, Health - Tex, Inc.

TEACHING ACTIVITIES

1. Demonstrate correct procedure for assembling piecework, stressing hand-eye coordination.
2. Instruct student to do mock production using finger dexterity.
3. Assign student to demonstrate knowledge of finger dexterity by being timed on piecework.

PERFORMANCE OBJECTIVE 24

CRITERION-REFERENCED MEASURE

Questions

1. Piecework has nothing to do with production. True or False?
2. _____ the smaller parts to fit marking on the larger parts.
3. In one motion, place the _____ part on the _____ part in the approximate location to be sewn.

Answers

1. False
2. Align
3. smaller, larger

Practical Application

Have student match and position pieces of garments.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 24 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 24

MATCH AND POSITION PIECES OF GARMENTS

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Removed garment parts from stacks, one in each hand.		
2. Placed, in one motion, the smaller part on the larger part in the approximate location to be sewn.		
3. Aligned the smaller part to fit markings on the larger part.		
4. Manipulated hands for sewing position while maintaining part alignment.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 25

TASK

Backtack parts of garments, such as labels and belt loops.

STANDARD OF PERFORMANCE OF TASK

Backtacked stitches must be located exactly on top of the seam run and limited to a maximum of five stitches.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor
How to Operate an Industrial Sewing Machine: Student's Manual, Book 3, Singer, pp. 9-10.

CONDITIONS FOR PERFORMANCE OF TASK

Sewing machine
Two garment parts
Needle
Thread

ENABLING OBJECTIVES

1. Thread sewing machine.
2. Safely operate sewing machine.

RESOURCE

Teacher Information Sheet 25-1.

TEACHING ACTIVITIES

1. Demonstrate correct procedure in backstitching.
2. Instruct student to demonstrate knowledge of backstitching by performing the task.
3. Discuss why backstitching is necessary.

PERFORMANCE OBJECTIVE 25

CRITERION-REFERENCED MEASURE

Questions

1. Backstitching is used to _____ the seam.

2. Stitching is not required to be sewn over the top of previous stitching to be uniform. True or False?

3. Backstitching should be at the _____ and _____ of each seam.

Answers

1. reinforce
2. False
3. beginning, ending

Practical Application

Have student backtack parts of garments, such as labels and belt loops.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 25 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 25

TEACHER INFORMATION SHEET 25-1

SPECIFICATIONS FOR BACKSTITCHING

1. Backstitching - sewing back and forth over the same row of stitching at start or finish of seam.
2. Use backstitching when there is no other stitching over ends of seams.
3. Backstitching prevents seam from raveling.
4. If backstitching, use uniform start and stop.
5. Backstitching must be neatly placed on the beginning and finishing of each seam.

CHECKLIST FOR PERFORMANCE OBJECTIVE 25

BACKTACK PARTS OF GARMENTS, SUCH AS LABELS AND BELT LOOPS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Raised presser foot slightly.		
2. Positioned edge of fabric under foot.		
3. Began stitching to a maximum of five stitches.		
4. Raised presser foot without stopping machine at the end of four to five stitches.		
5. Pulled fabric by hand in a reverse direction toward operator. (Stitches should be made exactly on top of the first set.)		
6. Lowered presser foot as machine returned to first original stitch, and completed operation in a forward direction.		
7. Repeated procedure at end of each seam if operation was finished with a backtack.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 26

TASK

Set and stitch garment buttons.

STANDARD OF PERFORMANCE OF TASK

Buttons must be spaced according to pattern with all eyes sewn. No material puckers should be evident.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Thread
Button sew machine with gauge
Buttons
Garment

ENABLING OBJECTIVES

1. Thread machine correctly.
2. List six steps for setting and stitching garment fasteners (buttons).

RESOURCE

Teacher Information Sheet 26-1.

TEACHING ACTIVITIES

1. Read sewing machine operation manual.
2. Discuss the purpose of a correct button or attachment.
3. Instruct the class to prepare five buttons sewn correctly.
4. Demonstrate correct procedure for stitching garment buttons.
5. Explain the operation procedure for the sewing machine.

PERFORMANCE OBJECTIVE 26

CRITERION-REFERENCED MEASURE

Questions

1. The button sew is a cycle machine. True or False?
2. The buttons should sew on tight to the garment. True or False?
3. The garment should be flat and free from puckers. True or False?
4. The distance between the buttons does not determine the quality of the garment. True or False?

Answers

1. True
2. True
3. True
4. False

Practical Application

Have student set and stitch garment buttons.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 26 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 26

TEACHER INFORMATION SHEET 26-1

THE BUTTON SEW MACHINE

Buttons are spaced according to buttonholes and should be sewn on after the buttonhole is made unless the button is a trim.

The spacing gauge used on the buttonhole machine may be attached to the button sew machine. Sometimes the button space is marked with invisible chalk which shows under a black light (glow light), or regular chalk may be used for marking.

The button sew machine has a raised cylinder bed. Since many buttons are in inaccessible places, the raised bed enables the operator to get at any area on a garment by placing the work under the clamp and at the same time placing the button in the jaws of the clamp. When the machine is started by the pedal, it will sew the button automatically and cut the thread at the end of the sewing cycle.

Since the clamp holds the button with the front edge open, the operator merely rotates the button in the clamp with the thumb until the holes are properly lined up.

The jaws are spring controlled so that the button can be pushed in and still be held by the jaws. The jaws can be adjusted to hold small or large buttons. (Sizes refer to button measurement as ligne. Example: 40 ligne button equals 1 inch diameter.)

To make the four-hole sewing pattern, the machine will sew the required number of stitches in the top two holes and then shift the clamp, the work, and the underclamp so that the bottom two holes are then under the needle. In other words, the needle bar does not shift forward, the work does. The machine sews the two bottom holes and returns to the original position.

The width of the bite can be adjusted to fit a large variety of buttons. The distance between the top and bottom rows can also be adjusted.

On the button sew machine, the operator must be concerned with (1) placing the work under the clamp at the exact spot where the button is to be sewn; and (2) placing the button into the clamp. The holes in the button must be lined up under the needle. Buttons set into the clamp in any of the following ways will only cause the needle to break.

Many regular buttons have four holes which the machine will sew in two different sewing motions. The changeover from two to four-hole buttons is a very simple change on the machine and can be done by the operator in two or three seconds. Refer to the machine manual for directions.

The button sew machine can be converted to sew naps, hooks and eyes, and other items which require a certain type of stitch.

TEACHER INFORMATION SHEET 26-1 continued

For the shank button, the machine would sew in the same manner as for a two-hole button. When shank buttons are used, the jaws are replaced with an attachment which holds the button in its side so that the hole in the shank is presented to the needle in the same manner as a flat button.

When the operation is highly standardized and production is great enough, a hopper feed can be added which will allow one button at a time to come down and drop into the clamp. The operator merely has to line up the button before starting the machine.

CHECKLIST FOR PERFORMANCE OBJECTIVE 26

SET AND STITCH GARMENT BUTTONS

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
NOTE: A button sew machine has a specially designed presser foot to hold buttons while they are sewn. When the machine is stopped the foot lifts to its highest point automatically.		
1. Placed button in presser foot with button in position for machine needle.		
2. Placed garment or part under needle and against gauge.		
3. Engaged machine; presser foot automatically dropped into sew position and sewed a preset cycle of stitches, then raised automatically.		
4. When cycle was completed, moved garment or part to next button position.		
4. Repeated items 1 through 4 until all buttons were sewn.		
5. Removed garment or part and disposed of material.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 27

TASK

Set and stitch garment zippers.

STANDARD OF PERFORMANCE OF TASK

Set and stitch a zipper into the zipper opening. The topstitching must be straight and uniform. The zipper must be completely covered.

SOURCE OF STANDARD

Mississippi Writing Team

CONDITIONS FOR PERFORMANCE OF TASK

Lockstitch machine with zipper presser foot
Garment parts
Zipper
Thread

ENABLING OBJECTIVES

1. Operate lockstitch machine with presser foot.
2. List four types of zippers.

RESOURCE

Teacher Information Sheets 27-1 and 27-2.

TEACHING ACTIVITIES

1. Instruct student to list four types of zippers.
2. Show student the four types of zippers.
3. Assign student to read resource material.
4. Assign student to demonstrate knowledge of setting zippers by setting one of each kind of zipper.
5. Instruct student to demonstrate procedures for setting and stitching the four types of zippers.

PERFORMANCE OBJECTIVE 27

CRITERION-REFERENCED MEASURE

Questions

1. An invisible zipper is topstitched. True or False?

2. In setting a lapped zipper, the right side of zipper and material must be together. True or False?

3. Zippers which are open at the top and closed at the bottom are referred to as _____ zippers.

Answers

1. False
2. True
3. conventional

Practical Application

Have student set and stitch garment zippers.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 27 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 27

TEACHER INFORMATION SHEET 27-1

TYPES OF ZIPPERS

Zippers which are open at the top and closed at the bottom are referred to as conventional zippers.

Lapped, cut-in, and kissing zippers are types of conventional zippers. A lapped zipper is frequently used in the back of a dress or the side of a skirt. A cut-in zipper is used in the back of a blouse or skirt when there is not a seam. The kissing zipper is most often used in the back of a blouse.

The invisible zipper is set in such a way that it looks like a seam rather than a zipper. It virtually disappears within the seam.

A separating zipper is open at the top and bottom. Garments such as jackets and robes which open completely require a separating zipper.

A zipper which is closed at the top and the bottom is known as a side placket zipper.

PERFORMANCE OBJECTIVE 27

TEACHER INFORMATION SHEET 27-2

SETTING ZIPPERS

Setting the Kissing Zipper and Separating Zipper

The kissing or French zipper requires a centered application. This type of zipper is frequently used in the back of a dress or a blouse. The methods for setting zippers vary from one industry to another based on the type and quality of garment under construction. The following steps show one method of setting a kissing zipper.

1. Stitch center back seam leaving an opening at the neckline 3/4 inches (1.9 cm) longer than the zipper from tab to bottom stop.

2. Place zipper face up with 5/8 inches (1.5 cm) seam turned under. Stitch with face side up 1/4 inches (.64 cm) from edge.

3. Hold zipper securely in place and stitch down one side 1/4 inches (.64 cm) from center of the garment. Leave needle down; turn and walk across bottom of zipper below bottom stop. With needle down, pivot and continue stitching to neckline of garment.

Setting a Lapped Zipper

A lapped zipper is used in the back of a dress or the side of a skirt and is often referred to as a continual zipper. A side placket zipper is closed at the top as well as the bottom. Its application is the same as the lapped zipper. The side zipper is locked across the top as well as the bottom.

The following steps explain how to set a lapped zipper.

1. Stitch a seam leaving an opening 3/4 inches (1.9 cm) longer than the zipper from tab to bottom stop.

2. Extend right seam allowance.

3. Place closed zipper facedown on seam allowance with bottom stop on base of garment opening and zipper teeth next to the seam.

4. Start stitching at top of zipper and continue to bottom.

5. Turn zipper faceup to form a fold in the seam allowance.

6. Begin topstitching at the top of zipper in the seam of the garment.

7. Stitch from top of zipper. Stop with needle down; pivot and continue stitching to the garment edge of zipper bottom. Backstitch.

8. Dispose of material.

TEACHER INFORMATION SHEET 27-2 continued

Setting a Cut-In Zipper

A cut-in zipper is used when there is no seam allowance in the back of a blouse or dress.

1. Place the zipper facedown and stitch the left side on an even line down the back of blouse.
2. Cut the side next to the tape 1/4 inches (.64 cm) to stitching line.
3. Turn zipper upside down to stitch across bottom of teeth of the zipper.
4. Clip again to needle.
5. Turn zipper around. Stitch 1/4 inches (.64 cm) away from cut edge, closing up the cut-in opening. Only the teeth of the zipper should show.
6. The garment should not be taken from under the needle until the operation is completed.

Setting an Invisible Zipper

The invisible zipper requires a special foot. This foot may vary depending on whether the coil is plastic or metal. Be sure you have the correct invisible zipper foot on the machine before setting the zipper.

1. Place the zipper facedown and stitch down to the seam allowance.
2. Stitch the left side in the same manner. The tab of the zipper at the top should be the only evidence of a zipper.
3. Backstitch on top of the original thread so that the zipper will not pull out.

Setting a Fly Zipper

1. With right sides together, stitch 1/2 inches (1.3 cm) above seam extension.
2. Place right extension fold along sides of zipper teeth and stitch on folded edges.
3. Lap left front extension over zipper. Start topstitching an inch (2.6 cm) from the fold at the top of the zipper. Continue to stitch by tapering toward the fold at the bottom of the zipper. The flystitch is on the right side for women and on the left side for men.

CHECKLIST FOR PERFORMANCE OBJECTIVE 27

SET AND STITCH GARMENT ZIPPERS

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Extended right seam allowance.		
2. Placed closed zipper face down on seam allowance with bottom stop on base of garment opening and zipper teeth next to the seam.		
3. Started stitching garment face up at bottom of zipper and continued to top.		
4. Turned zipper face up forming a fold in the seam allowance.		
5. Aligned fold to within 1/8" of zipper teeth.		
6. Stitched on fold of material starting at the bottom of zipper and continuing to top.		
7. Spread garment part flat with zipper face down on machine bed.		
8. Began topstitching at the bottom of zipper in the seam of the garment.		
9. Stitched across bottom of zipper, stopped with needle down, pivoted, and continued stitching to the garment edge of zipper top.		
10. Disposed of material.		

APPROVED: YES _____ NO ____

Evaluator's Signature **Date**

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 28

TASK

Sew curved edges.

STANDARD OF PERFORMANCE OF TASK

The seam width must be uniform.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Lockstitch machine
Two plys of fabric with matched curved edges
Thread

ENABLING OBJECTIVES

1. Understand use of combination/cloverleaf seam gauge.
2. Identify various seam widths.
3. Demonstrate safe work practices.

RESOURCE

How To Operate An Industrial Sewing Machine: Student's Manual, Book 3, Singer, pp. 9-10.

TEACHING ACTIVITIES

1. Display example of curved seams.
2. Identify combination/cloverleaf seam gauge.
3. Match correct side of gauge to shape of the curve to be sewn.
4. Demonstrate how to attach gauge to machine at specified seam width.
5. Demonstrate how to sew a curved seam.
6. Instruct student to practice sewing curved seams.

PERFORMANCE OBJECTIVE 28

CRITERION-REFERENCED MEASURE

Questions

1. To sew a seam with this shape (shown above) use the side of the seam gauge that resembles a., b., or c. shown below?

a.

b.

c.

PERFORMANCE OBJECTIVE 28

CRITERION-REFERENCED MEASURE Continued

Questions

2. To sew a seam with this shape (shown above) use the side of the seam gauge that resembles a., b., or c. shown below?

a.

b.

c.

Answers

1. b.
2. c.

Practical Application

Have student sew curved edges.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 28 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 28

SEW CURVED EDGES

Student's Name **Date**

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Positioned operator's chair so that when seated the operator was centered in front of the needle.		
2. Switched machine on.		
3. Picked up two plys of fabric and matched edges.		
4. Raised foot and positioned plys under needle at starting point with matched edges contacting seam gauge.		
5. Lowered presser foot and stitched a curve seam with fabric edges in contact with seam gauge.		
6. Stopped the machine at highest point on curve.		
7. Raised presser foot and repositioned fabric if necessary.		
8. Repeated item 5 until stopping point was reached.		
9. Performed all work in a safe manner.		

APPROVED: YES _____ NO _____

Evaluator's Signature **Date**

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 29

TASK

Stitch darts.

STANDARD OF PERFORMANCE OF TASK

The seams must be straight, no longer than specified by the operation, and a uniform width from folded edges.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Piece of material to be stitched
Lockstitch machine
Thread

ENABLING OBJECTIVES

1. Backtack with a single needle lockstitch machine.
2. Chain off with a single needle lockstitch machine.
3. Demonstrate safe work practices.
4. Thread machine properly.
5. Identify the major components of the lockstitch machine.

RESOURCES

1. Bayne. **Creative Clothing Construction,** p. 259.
2. Teacher Information Sheet 29-1.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Describe the two basic types of darts: straight or shaped, and double pointed.
3. Show examples of garments with darts.
4. Demonstrate the methods for sewing darts.
5. Instruct student to stitch darts.

PERFORMANCE OBJECTIVE 29

CRITERION-REFERENCED MEASURE

Questions

1. Which end of the dart is backtacked?
2. What is the purpose of darts?
3. What is the purpose of "chaining off" on both ends?

Answers

1. the wide end
2. to provide fit in a garment
3. to provide a smooth point without puckers

Practical Application

Have student stitch darts.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 29 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 29

TEACHER INFORMATION SHEET 29-1

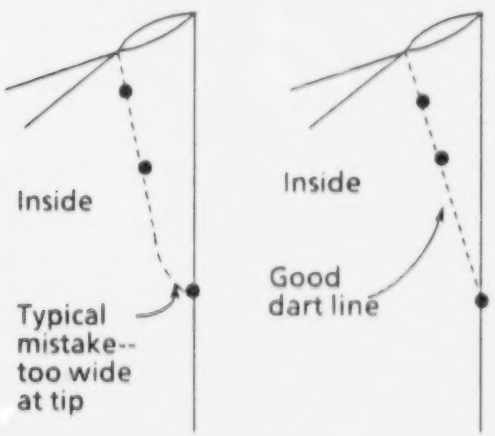
DARTS

Darts are used in clothing to provide fit. They can be found in the neck, waist, shoulder, armhole, side seam, sleeve, or bust of a garment. Garments that are closely fitted at the waist, hips, bust, shoulder, or sleeve may use darts to achieve that effect.

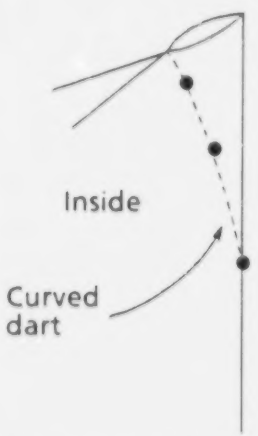
A dart is formed when a triangular fold of fabric is sewed into the garment. Usually the fold is on the inside of the garment, however, to create a different look the designer may have the darts showing on the outside.

There are basically two kinds of darts: those that have two points and those with only one point. The two pointed darts are called "double pointed" and the single pointed darts are called "straight" or "shaped." Double pointed darts are used when there is no seam that the darts come out of, such as a one piece dress. To obtain a close fit without seams there could be a dart running down the front of the dress. Straight or shaped darts are sewn into a seam. They are wide at one end and come to a point at the other end. A straight dart is formed by sewing a straight line from one end to the other. Shaped darts are curved to better conform to the shape of the body.

When a garment calls for a dart it may have notches, marks, or punch holes indicating placement, or the operator may be instructed to use a gauge on her machine to locate the darts. It is important when sewing darts that they are in the correct place and are sewn properly. Straight or shaped darts are usually backtacked at the wide end but not the point. Backtacking the points of darts will cause them to pucker. A puckered dart detracts from the beauty of a garment and is unacceptable. The point of a dart is critical. It must be sewn to a smooth, sharp point to avoid puckers. To secure the point of a dart without backtacking, you must chain off and leave about 1/2 to 1 inch of chain attached to the garment. Double pointed darts must be begun with a chain of thread and ended by chaining off, since backtacking is not allowed.



Ruler-straight darts



Curved dart lines must be smooth.

CHECKLIST FOR PERFORMANCE OBJECTIVE 29

STITCH DARTS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Picked up material by specified method.		
2. Folded according to markings.		
3. Placed material under presser foot on wide end of dart.		
4. Stitched to pointed end of dart.		
5. Disposed according to method specified. NOTE: If method required backtacking at beginning and end of stitching, followed procedures outlined for backtacking.		
6. Performed all work in a safe manner.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 30

TASK

Blindstitch hems.

STANDARD OF PERFORMANCE OF TASK

The hem stitching must be uniform and a correct distance from the bottom of the garment. Skipped stitches must not be evident.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Blindstitch machine
Piece of material to be hemmed
Thread

ENABLING OBJECTIVES

1. Thread blindstitch machine.
2. Demonstrate safe work practices.

RESOURCE

Teacher Information Sheet 30-1.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Instruct student to identify the basic parts of the blindstitch machine.
3. Demonstrate method of hemming with blindstitch.
4. Demonstrate the correct technique to fold a hem.
5. Instruct student to blindstitch hems.

PERFORMANCE OBJECTIVE 30

CRITERION-REFERENCED MEASURE

Questions

1. Before removing the fabric from the machine, turn the handwheel in which direction?
2. The needle of the blindstitch partly enters the _____ ply of material.
3. The machine must be adjusted for the amount of _____ necessary for the thickness of the fabric.
4. The blindstitch machine uses a _____ needle.
5. The _____ feeds the fabric into the needle.
6. The _____ adjusts the space between the needle and the oscillating rib.

Answers

1. in the direction that the motor turns
2. face
3. needle penetration or bite
4. curved
5. oscillating rib
6. regulation dial

Practical Application

Have student blindstitch hems.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 30 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 30

TEACHER INFORMATION SHEET 30-1

BLINDSTITCH HEMS

Hemming on the Blindstitch Machine with a Folder Attachment

Blindstitch machines with folders help the operator maintain a uniform hem width. The operator guides the cloth through the folder with the right hand and disposes of the cloth with the left hand.

Follow these steps when hemming with a folder.

1. Select enough cloth to make at least five hems of approximately 1 yard (0.9 meters), snips, and thread.
2. Go the the blindstitch machine with a folder.
3. Check machine to see if it is threaded according to the manufacturer's specifications. If it is not already threaded, do so.
4. Turn the handwheel in same direction as motor turns machine until the needle reaches the extreme left-hand position of its swing.
5. Press the knee lifter to the right. This drops the feed frame and creates a gap between the presser foot and the plattens.
6. Insert cloth underneath the presser foot. The edge of the hem fold is lined up with the center of the spring-loaded cloth retainer or "shoe."
7. Release the lifter. This locks the work in position.
8. Guide the cloth through the folder with the right hand. (During machine operation do not allow your knee to rest against the knee lifter. This slight pressure can affect needle penetration and result in uneven stitch quality.)
9. Stitch the hem for 2 to 3 inches (5.08 to 7.62 cm) to be sure you are getting the proper penetration.
10. The machine will feed in the cloth at the proper rate. Dispose of the cloth with the left hand.
11. Remove cloth from machine by raising knee lift. Pull material away from you; allow the needle to lock the loop to avoid raveling.

CHECKLIST FOR PERFORMANCE OBJECTIVE 30

BLINDSTITCH HEMS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Picked up material and folded to hem desired.		
2. Placed material under presser foot, maintaining hem width.		
3. Adjusted bite of needle.		
4. Began stitching and continued to end of hem, maintaining uniform width.		
5. Raised presser foot and disposed of material.		
6. Performed all work in a safe manner.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 31

TASK

Topstitch garments.

STANDARD OF PERFORMANCE OF TASK

Topstitch the part in the specified location. Stitch length must be correct as specified by the operation and uniform with no gathered or puckered areas.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITION FOR PERFORMANCE OF TASK

Lockstitch machine
Garment part
Thread

ENABLING OBJECTIVES

1. Operate single needle lockstitch machine.
2. Demonstrate safe work practices.
3. Identify the major components of the lockstitch machine.
4. Thread the lockstitch machine.

RESOURCE

Teacher Information Sheet 31-1.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Point out examples of topstitching and explain its purpose.
3. Discuss the need for even topstitching.
4. Demonstrate topstitching.
5. Instruct student to topstitch garments.

PERFORMANCE OBJECTIVE 31

CRITERION-REFERENCED MEASURE

Questions

1. Topstitching is primarily used to provide _____ in garments.
2. A topstitched seam must be _____ in width throughout.
3. Topstitching can be achieved through the use of a (an) _____ or a (an) _____.
4. Who determines the width of the topstitching?

Answers

1. design accent
2. uniform
3. topstitching foot, gauge
4. manufacturer

Practical Application

Have student topstitch garments.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 31 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 31

TEACHER INFORMATION SHEET 31-1

TOPSTITCHING GARMENTS

Topstitching Square Corners

Manufacturers specify topstitching on garments to give them a more tailored look and to add eye appeal. Topstitching is usually decorative due to the location of the stitching on collars, sleeves, seams, pleats, and waistbands.

The distance of the topstitching from the seam or edge of the garment is determined by the manufacturer's specifications. Topstitching is usually done on the single needle lockstitch machine.

Follow these steps in topstitching.

1. With material lying flat, turn the seam to center front or center back, depending upon specifications.
2. Measure the topstitching seam 1/4 inches (.64 cm) from seam.
3. Stitch on right side of material.

Topstitching widths vary from 1/4 inches to 1 inch (.64 to 2.5 cm), depending on the type of garment and material. An operator may use a special type of topstitching foot and gauges or only a gauge, depending on the width of the topstitching.

Follow these steps in topstitching a collar.

1. Secure a simulated collar, thread, and snips.
2. Thread a single needle lockstitch machine according to manufacturer's specifications.
3. Set the machine at 8 to 10 stitches per inch (2.54 cm).
4. Place fabric under compensating or gauge foot and stitch 1/4 inches (.64 cm) from the edge until you reach the corner of the collar. Stop 1/4 inches (.64 cm) from the corner so that when you turn the corner, the needle is in position to make the 1/4 inch (.64 cm) seam down the other side.
5. Lift the presser foot slightly so that the needle remains in the fabric. Leave enough space between the presser foot and the feed dog to turn the fabric.
6. Continue stitching until you reach the other corner of the collar.
7. Repeat Step 5 and turn a square corner. Your simulated collar should look like the one in Figure 4. In industry, an operator should be able to topstitch 300 collars per hour. The piece rate on standard collars is approximately $3.00 per 100.

CHECKLIST FOR PERFORMANCE OBJECTIVE 31

TOPSTITCH GARMENTS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Placed garment part under presser foot and adjusted to gauge.		
2. Lowered presser foot and began stitching.		
3. Continued stitching, holding material edge against gauge.		
4. After reaching end point of stitch line, removed material and disposed according to specified method. NOTE: Topstitching is primarily for decorative purposes, but can be used as reinforcement in some cases.		
5. Performed all work in a safe manner.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 32

TASK

Sew square corners.

STANDARD OF PERFORMANCE OF TASK

The seam margin must be uniform; the corner square and the corner stitch must have equal tension with other stitches.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITION FOR PERFORMANCE OF TASK

Lockstitch machine
Garment requiring a corner turn
Thread

ENABLING OBJECTIVES

1. Operate single needle lockstitch machine.
2. Thread lockstitch machine.
3. Identify parts of the lockstitch machine.
4. Demonstrate safe work practices.

RESOURCE

Teacher Information Sheet 31-1.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Instruct student to practice folding corners in a lapping triangular fold.
3. Display examples of garments with square corners.
4. Demonstrate method of sewing square corners.
5. Discuss the need for square corners.
6. Assign student to sew square corners

PERFORMANCE OBJECTIVE 32

CRITERION-REFERENCED MEASURE

Questions

1. When turning a corner while sewing, always
   a. quickly pivot the fabric without stopping.
   b. estimate a good turning point and use it.
   c. round off the corner.
   d. leave the needle down as the pivot point is checked.

2. The seam allowance after turning a corner should be _____ the seam allowance before the corner.
   a. a little more than
   b. a little less than
   c. the same as
   d. to the left of

3. The angle stitched on a corner should be
   a. the same angle as the cut fabric.
   b. either a 45° or 90° angle.
   c. adjusted to sewing style.
   d. wider than a pencil point.

Answers

1. d.
2. c.
3. a.

Practical Application

Have student sew square corners.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 32 to determine if the assignment was completed for competency

CHECKLIST FOR PERFORMANCE OBJECTIVE 32

SEW SQUARE CORNERS

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Picked up material and turned raw edge under to desired width.		
2. Placed material under presser foot and up to gauge stop.		
3. Began stitching.		
4. Stopped machine 1 to 2 inches from corner with needle in down position.		
5. Folded corner in a lapping, triangular fold and turned raw edge under to required amount on next side.		
6. Continued stitching to corner a seam width from next side, stopping with needle in down position.		
7. Raised presser foot, pivoted material, and lowered foot.		
8. Continued stitching until complete, maintaining uniform seam width.		
9. Released top thread tension, cut thread, and disposed of material.		
10. Performed all work in a safe manner.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 33

TASK

Sew square corners using continuous stitching.

STANDARD OF PERFORMANCE OF TASK

Seam margins must be uniform with no raw edges visible. There must be no ripback of joined stitches.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor

CONDITION FOR PERFORMANCE OF TASK

Lockstitch machine
Garment requiring four corners with continuous stitching
Thread

ENABLING OBJECTIVES

1. Thread lockstitch machine.
2. Operate single stitch machine.
3. Identify major components of the lockstitch machine.
4. Demonstrate safe work practices.

RESOURCE

How To Operate An Industrial Sewing Machine: Student's Manual, Book 3, Singer, pp. 9-10.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Display examples of garments requiring continuous stitching joining square corners.
3. Demonstrate the correct procedure for sewing continuous stitches around square corners.
4. Discuss the lapping triangular fold.
5. Discuss the quality expected with a continuous stitch.
6. Instruct student to sew square corners with continuous stitching.

PERFORMANCE OBJECTIVE 33

CRITERION-REFERENCED MEASURE

Questions

1. Give four examples of places on a garment that would require continuous stitching on a square.

2. Should the overlapping stitches be on top of each other or beside each other?

3. What may be required to secure the end of the stitching?

Answers

1. garment labels, patch pockets, topstitching, appliques
2. on top of each other
3. backtacking

Practical Application

Have student sew square corners using continuous stitching.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 33 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 33

SEW SQUARE CORNERS USING CONTINUOUS STITCHING

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Picked up material and turned raw edge under to desired width.		
2. Raised presser foot and placed material under needle and up to gauge.		
3. Lowered foot and began stitching, maintaining seam width.		
4. Stopped machine 1 to 2 inches from corner and folded corner in a lapping, triangular fold.		
5. Stitched to corner, stopping needle in down position.		
6. Raised presser foot and pivoted materials, aligning edge against or up to gauge.		
7. Repeated items 3, 4, and 5 to last corner.		
8. Connected beginning stitches with ending stitches.		
9. Backtacked stitch lap 5 to 8 stitches.		
10. Released top thread tension, raised foot, and pulled materials away from needle area.		

CHECKLIST FOR PERFORMANCE OBJECTIVE 33

SEW SQUARE CORNERS USING CONTINUOUS STITCHING

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
11. Cut thread and disposed of materials.		
12. Performed all work in a safe manner.		

APPROVED: YES _____ NO _____

Evaluator's Signature Date

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 34

TASK

Chain off stitches.

STANDARD OF PERFORMANCE OF TASK

The chain length must be a maximum of 1/2". The stitches must not unravel into the fabric.

SOURCE OF STANDARD

Mississipi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Fabric to be sewn
Lockstitch machine

ENABLING OBJECTIVES

1. Operate lockstitch machine.
2. Thread machine properly.
3. Identify major components of lockstitch machine.
4. Demonstrate safe work practices.

RESOURCE

Gaetan. **Sewing Machine Operator's Training Handbook for the Sewn Products Industry**, pp. 75-76.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Discuss the reasons and techniques for chaining off.
3. Demonstrate technique for chaining off.
4. Assign student to practice chaining off.
5. Discuss purpose of chaining off.

PERFORMANCE OBJECTIVE 34

CRITERION-REFERENCED MEASURE

Questions

1. When/Where may a seam be ended by chaining off?
2. Describe the process of chaining off.
3. What is the purpose of chaining off?
4. How long should the chain of thread be?

Answers

1. when the seam does not require reinforcement, or at the pointed end of darts
2. At the end of a seam the operator continues to sew past the edge of the cloth, forming a chain of thread that is guided directly behind the presser foot.
3. to keep a seam from raveling and to save time, as compared to back-tacking
4. between 1/2 to 1 inch

Practical Application

Have student chain off stitches.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 34 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 34

CHAIN OFF STITCHES

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Positioned fabric under pressure foot.		
2. Stitched desired seam.		
3. Continued stitching, leading the chain of stitches straight behind presser foot, after completing seam.		
4. Contacted the cutter plus 1/2", and stopped machine after chain stitching a sufficient distance.		
5. Cut thread chain on cutter leaving 1/2" chain attached to fabric.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 35

TASK

Sew straight seam.

STANDARD OF PERFORMANCE OF TASK

The seam must begin and end at respective points; it must not vary more than 1 /16" from a straight line drawn between points, and it must be a uniform width from edge.

SOURCES OF STANDARD

Mississippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Fabric piece marked with start and end points
Lockstitch machine
Thread
Sewing gauge

ENABLING OBJECTIVES

1. Operate lockstitch machine.
2. Identify major parts of lockstitch machine.
3. Thread lockstitch machine.
4. Use seam gauge.

RESOURCE

How To Operate An Industrial Sewing Machine: Student's Manual, Book 3, Singer, pp. 8-10.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Discuss uniformity of seam widths.
3. Demonstrate sewing a straight seam, keeping width uniform and specific.
4. Assign practice time for sewing straight seams.

PERFORMANCE OBJECTIVE 35

CRITERION-REFERENCED MEASURE

Questions

1. When stitching a straight seam, where should you focus your eyes?
2. Describe a quality sewn seam.
3. How should hands be positioned while sewing a straight seam?

Answers

1. at the sewing gauge, in front of the needle
2. one that is the specified width and uniform width from the edge
3. Hands should be placed in front of the presser foot and close to the line of sewing.

Practical Application

Have student sew straight seam.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 35 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 35

SEW STRAIGHT SEAM

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Positioned operator's chair so that when seated, the operator was centered in front of the needle.		
2. Turned lockstitch machine power on.		
3. Picked up fabric and raised presser foot.		
4. Positioned fabric under needle at beginning point.		
5. Lowered presser foot and stitched in a straight line.		
6. Stopped machine at end point with needle at highest position.		
7. Raised presser foot, pulled 3" to 4" of thread, and cut.		
8. Disposed of piece and picked up next.		
9. Verified that seam was straight and uniform distance from edge.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 36

TASK

Thread and operate safety stitch (overlock) machine.

STANDARD OF PERFORMANCE OF TASK

Thread safety stitch or overlock machine following manufacturer's instructions and operate machine, sewing seams without cutting more than 3/16" away from the seam.

SOURCE OF STANDARD

South Carolina Writing Team

CONDITIONS FOR PERFORMANCE OF TASK

Safety stitch (overlock) machine
Thread
Tweezers
Scissors or snips
Machine operator's handbook
with threading diagram

ENABLING OBJECTIVES

1. Identify major parts of safety stitch (overlock) machine.
2. Change machine needle.

RESOURCE

Machine operator's handbook.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Discuss the use of safety stitch machine.
3. Identify major parts and explain their functions.
4. Demonstrate technique for threading machine.
5. Demonstrate machine operation by sewing a straight seam.
6. Instruct student to thread and operate overlock machine.

PERFORMANCE OBJECTIVE 36

CRITERION-REFERENCED MEASURE

Questions

1. Which positon should the needles be in before releasing the presser foot?
2. How much fabric can be cut away with the safety stitch (overlock) machine?
3. What is the purpose of the safety stitch machine?

Answers

1. highest
2. not more than 3/16"
3. to provide a stronger seam and an extra seam in case one of them unravels

Practical Application

Have student thread and operate safety stitch (overlock) machine.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 36 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 36

THREAD AND OPERATE SAFETY STITCH (OVERLOCK) MACHINE

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Raised hinged table top without damaging machine.		
2. Raised needles to highest position.		
3. Removed machine covers to give access to threading area.		
4. Followed manufacturer's instructions for threading machine.		
5. Replaced covers and presser foot.		
6. Placed fabric under presser foot and sewed straight seam, cutting away no more than 3/16".		
7. Chained off correctly.		

APPROVED: YES ____ NO ____

Evaluator's Signature _____ Date _____

DUTY OPERATING INDUSTRIAL SEWING MACHINES

PERFORMANCE OBJECTIVE 37

TASK

Adjust thread tension on single needle lockstitch (SNL) machine.

STANDARD OF PERFORMANCE OF TASK

Adjusted tension to obtain a well-balanced stitch.

SOURCE OF STANDARD

South Carolina Writing Team

CONDITIONS FOR PERFORMANCE OF TASK

Single needle lockstitch machine
Fabric scraps
Small screwdriver
Thread

ENABLING OBJECTIVES

1. Identify major parts of single needle lockstitch machine.
2. Thread SNL.
3. Operate SNL.

RESOURCE

Machine operator's manual.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Discuss the formation of a lockstitch.
3. Show diagrams of a well-balanced stitch and a stitch with imbalanced tension.
4. Show samples of each stitch and discuss.
5. Demonstrate how to adjust needle and bobbin tension to make a well-balanced stitch.
6. Assign student to practice adjusting tension on SNL.

PERFORMANCE OBJECTIVE 37

CRITERION-REFERENCED MEASURE

Questions

1. What will turning the tension adjusting nut or screw clockwise do to the thread tension?

2. If the needle thread is looping on the underside of the seam, what is the cause?

3. If the needle thread lies flat on top of the seam, what is the problem?

Answers

1. tighten the tension
2. the needle thread is too loose
3. the needle thread is too tight

Practical Application

Have student adjust thread tension on single needle lockstitch (SNL) machine.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 37 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 37

ADJUST THREAD TENSION ON SINGLE NEEDLE LOCKSTITCH (SNL) MACHINE

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Identified seam with loose tension and made corrections.		
2. Identified seam with tight tension and made corrections.		
3. Sewed seam with a well-balanced stitch.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

MAINTAINING EQUIPMENT AND WORK STATION

DUTY MAINTAINING EQUIPMENT AND WORK STATION

PERFORMANCE OBJECTIVE 38

TASK

Add oil to maintain oil level (reservoir).

STANDARD OF PERFORMANCE OF TASK

The oil level must reach, but not exceed, the "high" mark in the reservoir.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor
How To Prepare and Care For An Industrial Sewing Machine: Student's Manual, Book 2, Singer, p. 5.

CONDITIONS FOR PERFORMANCE OF TASK

Automatic oiling machine
Cleaning rag
Oil

ENABLING OBJECTIVES

Identify oil reservoir on automatic oiling machine.

RESOURCES

1. Machine operator's manual.
2. Teacher Information Sheet 38-1.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Discuss machine lubrication.
3. Identify type of oil for machine.
4. Conduct demonstration on adding oil to reservoir.
5. Assign student to determine if machine needs oil.
6. Assign student to add oil if needed

PERFORMANCE OBJECTIVE 38

CRITERION-REFERENCED MEASURE

Questions

1. What type of oil should be used in an automatic oiling machine?
2. How should you determine if a machine needs oil?
3. How much oil should you add if the machine is low?

Answers

1. usually type "C" sewing machine oil, however, always consult machine manual to be sure
2. Check the oil gauge, if there is one, then check the level of the oil reservoir; if it reads low, then add oil.
3. Add only enough to bring the oil level to the full mark; never overfill.

Practical Application

Have student add oil to maintain oil level (reservoir).

Method of Evaluating Practical Application

Use Checklist for Performane Objective 36 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 38

TEACHER INFORMATION SHEET 38-1

PROCEDURE FOR ADDING OIL TO OIL RESERVOIR

Tools and supplies: fabric scraps, oil

1. Insert scrap material under needle.
2. Begin stitching and observe oil gauge (usually on right side of machine head).
3. If gauge indicates machine is low in oil, stop machine, turn power off, and tilt head back.
4. Observe reservoir level marks to substantiate gauge reading.
5. Add oil to "high" mark in reservoir.
6. Return machine head to sew position.
7. Clean excess spilled oil from machine.

CHECKLIST FOR PERFORMANCE OBJECTIVE 38

ADD OIL TO MAINTAIN OIL LEVEL (RESERVOIR)

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Inserted scrap material under needle.		
2. Began stitching and observed oil gauge (usually on right side of machine head).		
3. Stopped machine, turned power off, and tilted head back if gauge indicated machine was low on oil.		
4. Observed reservoir level marks to substantiate gauge reading.		
5. Added oil to "high" mark in reservoir.		
6. Returned machine head to sew position.		
7. Cleaned excess spilled oil from machine.		

APPROVED: YES ____ NO ____

Evaluator's Signature _____ Date _____

DUTY MAINTAINING EQUIPMENT AND WORK STATION

PERFORMANCE OBJECTIVE 39

TASK

Add oil to maintain oil level (lubrication points).

STANDARD OF PERFORMANCE OF TASK

Oil a machine having lubrication points. All points must be lubricated with a minimum of four can pulsations.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor
Gaetan. **Sewn Products Engineering & Reference Manual**, p. 89.

CONDITIONS FOR PERFORMANCE OF TASK

Oil can with spout
Machine with lubrication points
Scrap material

ENABLING OBJECTIVES

1. Identify machine parts.
2. Locate lubrication points.

RESOURCES

1. Machine operator's manual.
2. Teacher Information Sheet 39-1.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Discuss necessity and frequency of oiling machine.
3. Identify type of oil to use.
4. Conduct demonstration of oiling machine at all lubrication points.
5. Assign student to locate all lubrication points.
6. Instruct student to add oil to lubrication points as needed.

PERFORMANCE OBJECTIVE 39

CRITERION-REFERENCED MEASURE

Questions

1. How often should a machine require manual lubrication?

2. What parts of the machine should be oiled?

Answers

1. under heavy use, every day
2. any place that metal moves against metal and/or at all points indicated in the service manual

Practical Application

Have student add oil to maintain oil level (lubrication points).

Method of Evaluating Practical Application

Use Checklist for Performance Objective 39 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 39

TEACHER INFORMATION SHEET 39-1

PROCEDURE FOR OILING MACHINE HAVING LUBRICATION POINTS

Tools and supplies: oil, oil can with spout, rags, fabric scraps

1. Locate each lubrication point on machine (usually indicated by arrows).
2. Insert oil can spout into each point and lubricate by pumping can handle or pressing can bottom.
3. Wipe excess oil from around oil points.
4. Place scrap fabric under needle and engage power to circulate oil.
   Note: Machines oiled through points should be oiled daily.

CHECKLIST FOR PERFORMANCE OBJECTIVE 39

ADD OIL TO MAINTAIN OIL LEVEL (LUBRICATION POINTS)

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Located each lubrication point on machine (usually indicated by arrows).		
2. Inserted oil can spout into each point and lubricated by pumping can handle or pressing can bottom.		
3. Wiped excess oil from around oil points.		
4. Placed scrap fabric under needle and engaged power to circulate oil. Note: Machines oiled through points should be oiled daily.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

DUTY MAINTAINING EQUIPMENT AND WORK STATION

PERFORMANCE OBJECTIVE 40

TASK

Clean lint from machine.

STANDARD OF PERFORMANCE OF TASK

No lint, dust, or oil should be visible after cleaning the machine.

SOURCE OF STANDARD

Mississippi Writing Team Supervisor
Gaetan. **Sewing Machine Operator's Training Handbook**, pp. 87-88.

CONDITIONS FOR PERFORMANCE OF TASK

Industrial sewing machine
Material scraps
Screwdriver
Brush

ENABLING OBJECTIVES

1. Identify machine parts.
2. Replace machine needle.

RESOURCES

1. Machine operator's manual.
2. Teacher Information Sheet 40-1.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Discuss importance of keeping a machine clean.
3. Demonstrate proper way to clean machine.
4. Instruct student to clean lint, dust, and/or oil from machine.

PERFORMANCE OBJECTIVE 40

CRITERION-REFERENCED MEASURE

Questions

1. Which parts should be removed to properly clean a sewing machine?
2. Why should lint be removed from the machine?
3. How often should a sewing machine be cleaned?

Answers

1. throat plate, bobbin case, and any removable machine covers
2. Lint build-up will interfere with operation of machine.
3. under normal use, weekly; more often if needed

Practical Application

Have student clean lint from machine.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 38 to determine if the assignment was completed for competency.

PERFORMANCE OBJECTIVE 40

TEACHER INFORMATION SHEET 40-1

PROCEDURE FOR CLEANING LINT FROM MACHINE

Tools and supplies: clean rags, small brush, screwdriver, and fabric scrap

1. Turn machine power off.
2. Remove all work from machine area.
3. Wipe excess oil from machine with scraps and discard.
4. Brush all lint and dust from machine head, bed, and motor area.
5. Raise presser foot and remove throatplate with screwdriver.
6. Brush lint and dust from feed dog and top of bobbin case assembly.
7. Turn machine head to expose hook and bobbin case assembly.
8. Brush lint and dust from hook and bobbin case.
9. Return head to original position and replace throatplate.
10. Place 3" x 4" (7.6 cm x 10.2 cm) scrap over throatplate and lower presser foot to sew position. Scrap will absorb oil dripped from needle bar overnight.
11. Place cover over machine head.

CHECKLIST FOR PERFORMANCE OBJECTIVE 40

CLEANING LINT FROM MACHINE

Student's Name _____ Date _____

DIRECTIONS TO STUDENT — Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR — Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Turned machine power off.		
2. Removed all work from machine area.		
3. Wiped excess oil from machine with scraps and discarded.		
4. Brushed all lint and dust from machine head, bed, and motor area.		
5. Raised presser foot and removed throat plate with screwdriver.		
6. Brushed lint and dust from feed dog and top of bobbin case assembly.		
7. Turned machine head to expose hook and bobbin case assembly.		
8. Brushed lint and dust from hook and bobbin case.		
9. Returned head to original position and replaced throat plate.		
10. Placed 3" x 4" scrap over throat plate and lowered pressure foot to sew position. Note: Scrap will absorb oil dripped from needle bar overnight.		
11. Placed cover over machine head.		

APPROVED: YES ____ NO ____

Evaluator's Signature _____ Date _____

DUTY MAINTAINING EQUIPMENT AND WORK STATION

PERFORMANCE OBJECTIVE 41

TASK

Clean work area floor.

STANDARD OF PERFORMANCE OF TASK

No visible lint, dust, or other debris must be visible in the work area.

SOURCE OF STANDARD

Misissippi Writing Team Supervisor

CONDITIONS FOR PERFORMANCE OF TASK

Brush
Broom
Littered floor area around machine

ENABLING OBJECTIVES

1. Work safely.
2. Use brush and broom properly.

RESOURCE

Gaetan. **Sewing Machine Operator's Training Handbook for the Sewn Products Industry**, pp. 87-88.

TEACHING ACTIVITIES

1. Assign student to read resource material.
2. Identify dirty work area and determine need for cleaning.
3. Discuss with student the need for a clean work area floor.
4. Demonstrate method for cleaning around work area.
5. Assign student to clean work area.

PERFORMANCE OBJECTIVE 41

CRITERION-REFERENCED MEASURE

Questions

1. Whose responsibility is it to clean the operator's work area?
2. How often should the operator clean his/her work area?

Answers

1. the operator's
2. weekly or more often if needed

Practical Application

Have student clean work area floor.

Method of Evaluating Practical Application

Use Checklist for Performance Objective 41 to determine if the assignment was completed for competency.

CHECKLIST FOR PERFORMANCE OBJECTIVE 41

CLEAN WORK AREA FLOOR

Student's Name _____ Date _____

DIRECTIONS TO STUDENT: Prepare the proper equipment. Follow the verbal directions given by the instructor. Complete each step in the sequential order listed.

DIRECTIONS TO EVALUATOR: Observe the student. Pay close attention to items to be evaluated. Be sure the student completes the tasks within a reasonable time. An acceptable rating on each item is required for competency.

ITEMS TO BE EVALUATED	RATING	
	Acceptable	Unacceptable
1. Turned off machine power.		
2. Placed operator's chair on work bin.		
3. Brushed machine underframe, motor, and treadle.		
4. Removed all work from bins.		
5. Brushed all dirt, lint, or threads from bins onto floor.		
6. Returned production work to bins.		
7. Swept lint and debris (thread, paper, material scraps, etc.) from under machine treadle, machine bed, and work bins into aisle or predesignated location.		
8. Replaced brush and broom.		

APPROVED: YES _____ NO _____

Evaluator's Signature _____ Date _____

APPENDICES

APPENDIX A

DUTY/TASK LIST AND JOB TITLES

APPENDIX A

DUTY/TASK LIST

DUTY/TASK	P.O./PAGE NO.
A - ORGANIZING AND PLANNING	
Serve as liaison between operators, maintenance personnel, and manager.	1/5
B - DIRECTING AND IMPLEMENTING	
*Stress need for production (speed) and associate with quality.	2/10
Counsel employees concerning personal problems.	3/13
Recommend termination of operators who fail to make production requirements.	4/18
Develop safety rules.	5/22
Expedite rush orders.	6/27
Select appropriate size, fiber, and color of thread to match material.	7/31
Assign utility operators to positions.	8/37
Keep employee assignment ledger.	9/44
Conduct sewing room supply inventory.	10/49
Assign bundle person tasks.	11/54
Enforce acceptable housekeeping rules in sewing room.	12/59
*Enforce quality control standards.	13/65
C - INSPECTING AND EVALUATING	
Evaluate operator production progress.	14/69
Identify need for additional employees.	15/73
Inspect work stations.	16/76
Investigate accidents.	17/80
Identify need for additional equipment.	18/89
D - OPERATING INDUSTRIAL SEWING MACHINES	
Place bobbin on bobbin winder.	19/93
Tie on thread and thread sewing machine.	20/97
Insert bobbin in bobbin case; remove bobbin case and bobbin.	21/101
Replace bobbin in case and bring up bobbin thread.	22/105
Change needles.	23/109
Match and position pieces of garments.	24/113
Backtack parts of garments, such as labels and belt loops.	25/116
Set and stitch garment fasteners (buttons).	26/120
Set and stitch garment fasteners (zippers).	27/125
Sew curved edges.	28/131
Stitch darts.	29/135
Blindstitch hems.	30/139
Topstitch garments.	31/143

Sew square corners. 32/147
Sew square corners using continuous stitching. 33/150
Chain off stitches. 34/154
Sew straight seam. 35/157
*Thread and operate safety stitch (overlock) machine. 36/160
*Adjust thread tension on single needle lockstitch (SNL). 37/163

E - MAINTAINING EQUIPMENT AND WORK STATION

Add oil to maintain oil level (reservoir). 38/167
Add oil to maintain oil level (lubrication points). 39/171
Clean lint from machine. 40/175
Clean work area floor. 41/179

* Added by South Carolina Writing Team

JOB TITLES

D.O.T.	789132010	Foreman/Forewoman, Sewing Room
D.O.T.	786782090	Sewing Machine Operator, Regular Equipment
D.O.T.	786885034	Sewing Machine Operator, Special Equipment
D.O.T.	787782290	Sewing Machine Operator, All Around

APPENDIX B

DEFINITIONS OF TERMS

APPENDIX B

DEFINITIONS OF TERMS

A number of terms frequently used in this guide may be unfamiliar to the reader; others may be familiar, but in the context of this handbook they have been assigned special meanings.

AFFECTIVE.
Skills which emphasize an attitude, feeling, emotion, or degree of acceptance and rejection.

CATALOG.
A comprehensive collection of performance objectives, performance guides, and related data developed in a specific domain.

CBVE (COMPETENCY-BASED VOCATIONAL EDUCATION).
A methodology of instruction that (a) identifies the abilities and skills needed for on-the-job performance; (b) informs students and teachers of the precise and detailed learning objectives required to achieve these competencies; (c) emphasizes performance standards in testing, course requirements, and/or graduation; and (d) facilitates learning by letting each student master the task prior to advancing to another.

CHECKPOINT.
A point in the development of the V-TECS product when material must be sent to V-TECS central office for quality review.

CIP (CLASSIFICATION OF INSTRUCTION PROGRAM) CODE.
A code developed by the U.S. Office of Education to identify a specific cluster of related jobs for training program identification.

COGNITIVE.
Skills which emphasize the recall of knowledge and development of intellectual abilities.

COMPETENCY.
Proficiency in the knowledge and skills required of workers in a particular occupation or occupational specialty; a term used by educators to mean program goal, duty, task, or objective. In some cases the terms are essentially synonymous.

CONDITIONS.
Describes the situation for competent task performance, including tools and equipment to be used, and limitations under which the task will be performed.

CONSORTIUM.
A group of state agencies, institutions, or other entities which have been legally constituted through letters of commitment, agreements, or by assignment of higher authorities to work together toward the solution of problems in education. A consortium, for the purposes of this work, must have membership from autonomous agencies and institutions which cut across state boundaries as they attempt to solve problems or meet goals.

CRITERION-REFERENCED MEASURES.
An evaluative procedure used to determine if a student has mastered a performance objective.

CROSS-REFERENCE TABLE.
A table that identifies the relationship among duties and tasks found in the occupational inventory and the performance objectives in the final catalog. Also noted are percentages of incumbents performing the tasks by D.O.T.

CURRICULUM GUIDE.
An instructional resource developed from a V-TECS catalog to guide CBVE for an occupation.

DICTIONARY OF OCCUPATIONAL TITLES (D.O.T.).
A document published by the U.S. Department of Labor, Employment and Training Administration. This publication groups occupations into systematic occupational classification structures based on interrelationships of job tasks and requirements.

DISTRACTOR.
An incorrect response to a multiple-choice or true/false test item.

DOMAIN (OCCUPATIONAL DOMAIN).
A group of job titles that are related on the basis of required skills and knowledge.

D.O.T. CODE.
A nine-digit number used to identify a specific job within a given calendar year.

DUTY.
A cluster of related tasks performed by incumbent workers in an occupational domain.

ENABLING OBJECTIVE.
An objective related to background knowledge or skills that are prerequisite to the mastery of a given task.

FIELD REVIEW.
The process of using and refining drafts of V-TECS materials for the purpose of identifying content errors or technical problems.

GUIDE SHEET.
Instructional information including the duty, performance objective, task, performance of standard, survey of standard, conditions for performance of task, enabling objectives,resources, teaching activities, criterion-referenced measures, and performance guide.

JOB.
A group of tasks performed by a job incumbent.

JOB INCUMBENT.
An individual who is currently employed in an occupation.

OCCUPATIONAL ANALYSIS (Task Analysis).
The process of reviewing elements of a job for the purpose of improving training program content across program levels of vocational-technical education.

OCCUPATIONAL INVENTORY (Task Inventory Booklet).
A survey instrument listing tasks performed and tools and equipment used by job incumbents in an occupational domain.

OCCUPATIONAL SURVEY.
The procedures for collecting data to identify the duties and tasks that comprise one or more jobs, job types, or career field ladders for the collection and analysis of information concerning such duties.

O.E./CIP CODE.
A code developed by the U.S. Office of Education to identify a specific cluster of related jobs for training program identification.

PERFORMANCE-BASED INSTRUCTION.
Instruction which requires the learner's demonstration of specific competencies. The desired abilities are selected before the instruction is described and are clearly defined as observable performance objectives.

PERFORMANCE CHECKLIST.
A list of performance steps derived from the performance guide to record acceptable or unacceptable performance of each step of a task.

PERFORMANCE GUIDE (PG).
A series of steps required for performance of a task arranged in the sequence ordinarily followed.

PERFORMANCE OBJECTIVE (PO).
A statement, in precise measurable terms, of a particular behavior to be exhibited by a learner under specified conditions, including a standard of performance.

PSYCHOMOTOR.
Skills which emphasize manipulation of material or tools.

QUALITY REVIEW.
A review of content by V-TECS staff or designated representative to examine quality of content, format, and style of V-TECS product(s).

RESOURCES.
Materials which are used to develop instruction and/or learner-specific objectives.

SOURCE OF STANDARD.
A person or origin from which the information establishing the standard is received.

STANDARD.
The criteria used to determine if a task has been successfully or unsuccessfully performed.

STATE OF THE ART REFERENCE.
Current materials from which information or resources can be found to facilitate instruction.

STATE OF THE ART (SOA) STUDY.
Research conducted to determine the current status of performance-based instructional materials and practices in the domain area under study and obtain other information that might be useful in catalog development.

SUBJECT-MATTER EXPERT.
A highly experienced person (incumbent worker/instructor) who assists in identifying task performance steps, skills, and knowledge necessary to perform the job.

TASK.
A unit of work activity which constitutes logical and necessary steps in the performance of a duty. A task has a definite beginning and ending point in its accomplishments and generally consists of two or more definite steps.

TASK ANALYSIS.
The process of reviewing elements of a job for the purpose of improving training program content across program levels of vocational technical education.

TASK LIST.
A list of tasks performed by incumbents in a specific occupational domain.

TEACHING ACTIVITIES.
Methods and/or procedures for delivering instructional content to students.

TEST-ITEM BANK.
A collection of criterion-referenced test items coded for input and retrieval by computer or manual methods.

VALIDATION.
The process of assuring that all aspects of an occupational task analysis identify the skills, knowledge, and attitudes performed in the occupation.

VERIFICATION.
The procedure of collecting data to substantiate an existing product; for example, task list verification.

V-TECS.
An acronym representing: Vocational-Technical Education Consortium of States; 1866 Southern Lane, Decatur, Georgia 30033. A consortium of states that provide competency-based, vocational-technical education materials while conserving time and money through shared development and dissemination.

V-TECS CATALOG.
An incumbent-based description of the duties, tasks, performance objectives, performance guides, and related data in a specified occupation.

WORKING CONDITIONS.
The atmospheric and environmental conditions under which a worker performs a specific job.

WRITING TEAM.
A team of people representing instructors with subject matter expertise; persons having knowledge and experience in developing criterion-referenced measures; local or state supervisors in the domain being developed; workers and supervisors of incumbent workers whose function is to analyze occupational data and develop performance objectives for specific D.O.T. areas.

APPENDIX C

TOOLS/EQUIPMENT/WORK AIDS

APPENDIX C

Tools/Equipment/Work Aids by Percent Incumbents Using

Tools/Equipment/Work Aids	Percentage of Members	Number of Members Using
Pencils	89.44	127
Scissors	75.35	107
Screwdriver	66.90	95
Tweezers	61.27	87
Oil Can	59.86	85
Lint Brush	50.00	71
Snips	49.30	70
Needle Wrench	47.18	67
Small Ruler	44.37	63
Seam Ripper	21.83	31
Utility Bag	19.01	27
Stopwatches	9.15	13
Small Broom	7.04	10
Slide Rule	3.52	5
Calculator	2.82	4
Clipboard for Time Study	2.82	4
Tape Measure	2.11	3
Pliers	2.11	3
Stitch Gauge	2.11	3
Small Lint Pick	1.41	2
Looper Threading Wire	1.41	2
Needles	1.41	2
Stapler	1.41	2
Pull Basting Pick	1.41	2
Knife	.70	1
Center & Corner Knives	.70	1
Staple Gun	.70	1
Adjustable Wrench	.70	1
Hammer	.70	1
Tacks	.70	1
Tape (Masking)	.70	1
Stitch Counter	.70	1
Charts	.70	1
Stitch & Seam Measure	.70	1
Piecework Tickets	.70	1
Thread Gauge	.70	1
Adding Machine	.70	1
Small Hand Tools, Assorted	.70	1
Drill Press	.70	1
Grinder	.70	1

APPENDIX D

SOURCES OF STANDARDS

APPENDIX D

Sources of Standards

1. Gaetan, Manual. **Sewing Machine Operator's Training Handbook.** Columbia, South Carolina: Bobbin Publications, Inc., 1972.

2. **How To Operate An Industrial Sewing Machine: Student's Manual, Book 3.** New York, New York 10001: Singer Industrial Products, 250 Fifth Avenue, 1972.

3. **How To Prepare and Care For An Industrial Sewing Machine: Student Manual, Book 2.** New York, New York 10001: Singer Industrial Products, 250 Fifth Avenue, 1972.

4. Mississippi V-TECS Writing Team Supervisor.

5. Mississippi V-TECS Writing Team Worker.

6. South Carolina Writing Team.

7. Walcoff, Charles. **Industrial Needle Trades.** New Brunswick, N.J.: Vocational-Technical Curriculum Laboratory, Building 4103 - Kilmer Campus, 1974.

APPENDIX E

STATE OF THE ART LITERATURE

APPENDIX E

STATE OF THE ART LITERATURE

1. Alabama State Department of Vocational-Technical Education. **Training Manual for Commercial Sewing Courses: Sewing Room Clinic.** Montgomery, Alabama 36104: Home Economics Education, Division of Vocational-Technical Education, n.d.

2. American Apparel Manufacturers' Association. **Careers in Industrial Sewing for the Apparel Manufacturing Industry: Teacher-Student Guide**. Arlington, VA 22209: The American Apparel Manufacturer's Association, 1611 North Kent Street, 1975.

3. **Basic Stitch Types**. New York, NY 10001: Singer Industrial Products, 250 Fifth Avenue.

4. **Glossary of Machine Sewing Terms**. New York, NY 10001: Singer Industrial Products, 250 Fifth Avenue, 1971.

5. **How to Build Industrial Sewing Skills: Student's Manual, Book 4**. New York, NY 10001: Singer Industrial Products, 250 Fifth Avenue, 1972.

6. **How to Operate an Industrial Sewing Machine: Student's Manual, Book 3**. New York, NY 10001: Singer Industrial Products, 250 Fifth Avenue, 1972.

7. **Inside Union Specials**. Huntley, IL 60142: Technical Training Center, 12005-4th Street, 1970.

8. **Know Your Sewing Machine: Student's Manual, Book I**. New York, NY 10001: Singer Industrial Products, 250 Fifth Avenue, 1972.

9. **The Mechanization of Sewing.** Huntley, IL 60142: Technical Training Center, 12005-4th Street, 1973.

10. Oklahoma State Department of Education. **Power Sewing Machine Training Manual**. Stillwater, OK 74074: Office of Vocational-Technical Education, 1515 West 6th Avenue.

11. **Pneumatics and Fluidics**. Huntley, IL 60142: Technical Training Center, 12005-4th Street, 1969.

12. **63400 Lockstitch**. Huntley, IL 60142: Technical Training Center, 12005-4th Street, 1965.

13. **Stitch Formation Types 401, 504, and 605**. Huntley, IL 60142: Technical Training Center, 12005-4th Street, n.d.

14. **Streamlined High Speed Lockstitch Machines**. Huntley, IL 60142: Technical Training Center, 12005-4th Street, 1974.

APPENDIX F

BIBLIOGRAPHY COMPILED BY THE SOUTH CAROLINA WRITING TEAM

APPENDIX F

BIBLIOGRAPHY COMPILED BY THE SOUTH CAROLINA WRITING TEAM

1. **Analytical Method - Operator Training Manual.** Health-Tex, Inc., 1977.

2. Bayne, Allyne. **Creative Clothing Construction**. New York, NY: McGraw-Hill, Inc., 1966.

3. Bittle. **What Every Supervisor Should Know**. 2nd ed., New York, NY: McGraw-Hill, Inc., 1980.

4. Gaetan, Manuel. **Sewn Products Engineering & Reference Manual**. Columbia, SC: Bobbin Publications, 1977.

5. ------. **Sewing Machine Operator's Training Handbook for the Sewn Products Industry**. Columbia, SC: Bobbin Publications, 1972.

6. **How to Prepare and Care for an Industrial Sewing Machine: Student's Manual, Book 2,** New York, NY 10001: Singer Industrial Products, 250 Fifth Avenue, 1972.

7. Oklahoma Department of Education. **Learn, Grow and Become**. Stillwater, OK 74074: VICA, Office of Vocational-Technical Education, Bob Patton-Coordinator, 1515 West 6th Avenue, 1984.

8. **A Statistical Quality Control Progam for the Sewn Products Industry** Washington, DC: U.S. Department of Defense, 1964.